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NEW RESEARCHES

ON

ACUTE ARTICULAR RHEUMATISM IN GENERAL;

AND ESPECIALLY

ON THE LAW OF COINCIDENCE OF PERICARDITIS AND
ENDOCARDITIS WITH THIS DISEASE,

AS WELL AS ON

THE EFFICACY OF THE METHOD OF TREATING IT BY REPEATED BLOOD-
LETTINGS AT SHORT INTERVALS.

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His observatis, nemo rationis capax jure in his morbis vituperare
missionem sanguinis potest, sed mirifice et tanquam divinum auxilium
commendare, extollere, et confidenter usurpare.

BOTAL, *De Curatione per Venæsectionem.*

TRANSLATED BY

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PHILADELPHIA:

HASWELL, BARRINGTON, AND HASWELL.

1837.

*The same in
91*

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Entered according to the Act of Congress, in the year 1837, by
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the Eastern District of Pennsylvania.

PREFACE.

UNTIL recently, the history of rheumatism in general, and of acute articular rheumatism in particular, has been nearly stationary. What do I say? under certain points of view our knowledge of this disease had really retrograded. We may, it is true, in the writings of Sydenham and in Stoll find some positive ideas on the causes, nature, and treatment of articular rheumatism; which certain *modern classical* physicians have entirely misunderstood. Who would believe, for example, that it were possible for any one in our times to carry false observation so far as to proclaim, that alternations of heat and cold have but little to do in the production of acute articular rheumatism; that this affection should not be classed with the great family of phlegmasiæ; that it is of the number of diseases on which pathological anatomy has taught us nothing certain? &c.

I trust that the Researches to which the attention of the medical public is now invited, will do ample justice to these singular heresies, and will bring back into the path of correct observation, a crowd of young men whom the influence of bad teaching had misled. After all, the principal object of this little work is not so much to refute errors, thus generally propagated on various points in the study of acute articular rheumatism, as to make known to our brethren what recent researches have further taught us on the coincidence of this disease with inflammation of the internal and external sero-fibrous tissues of the heart, and on the efficacy of abstractions of blood, practised according to a method peculiar to the author.

It is, I will venture to say, a discovery worthy of some attention; to wit, the almost constant coincidence, either of endocarditis, or of pericarditis, or endo-pericarditis, with violent acute articular rheumatism. This fact, which daily observations more and more confirm, is of such vast importance that it constitutes, in some measure, a true revolution in the history of acute articular rheumatism. I am not at all astonished that so many are opposed to it: that is the fate of all new truths of any importance. But what I am not afraid to predict is, that but a short time hence it will scarcely be conceived how so evident a fact could have been concealed from the scrutiny of physicians who preceded us in their observations. Among many persons who for three years have followed our clinic and verified the fact, I will mention MM. Capuron, Pelletan, and Douné, clinical chiefs; Lecouteulx, clinical aid; Desclaux, Raciborski, Tournier, Péturet, Denise, Lalanne, Bressan, Nauthonnier, Clémenceau, Chevé, Fournet, one of the most distinguished *internes* of the hospitals; Coquet-Dusablon, Faure, Chapel, Jallat, Michel, &c. In fine, there is not a hospital in which the new discovery may not be verified every day, by those who have any tact in the valuable methods of percussion and auscultation.

Neither was it an unimportant matter to learn how to cure in one, two, or three weeks, a disease which was the despair of those modern practitioners, whose name was authority, whose practice was law. And it was so much the more important promptly to put an end to this disease, reputed hitherto so formidable, as, in its prolongation it caused, among a majority of those affected, incurable organic lesions of the heart, sad and melancholy relics of that endocarditis and pericarditis which had been hitherto mis-

understood. Now (and this remark is worth remembering), we know how to soothe this untractable acute articular rheumatism, precisely by the method of abstractions of blood which, according to some of our celebrated clinical professors, especially MM. Chomel and Louis, could be of little or no avail against the long duration of such a malady. True it is, that to obtain from this method the success which we announce (without fear of being contradicted by those who have witnessed our practice) we have been obliged to have recourse to it differently from what has yet been done. It has been in applying to the treatment of acute articular rheumatism the method of copious abstractions of blood at short intervals, which we have made use of so successfully in the treatment of all the violent phlegmasiæ in general, that we have at length triumphed, without a very great resistance, over an affection which had, as it were, set at naught the plan of abstractions of blood commonly used.

Vainly is this method contested by those who have never practiced it. The time will soon come when they will not dare to gainsay it. It is not indeed in our day only that copious abstractions of blood have been objected to. Overcome by the prejudices of his age, Sydenham had sometimes to renounce venesection to the extent which he thought necessary.*

Botal, who in his days was the most ardent lover of blood-letting, could not always be pleased with the reception he met with from his cotemporaries. In revenge he sometimes treated them harshly enough; for example, in his work *De Curatione per Venæsectionem*, ch. vii., he says:—"At in tantâ timiditate et parçâ detractatione sanguinis, qui fieri potest, ut quis rectè possit judicare quantum ex in pestilenti morbo prodesse valeat, aut obesse? Non enim morbus pro cujus curatione requirebatur detractio librarum quatuor sanguinis, in quo una tantum detrahitur, si hominem interficiat, ideo interficit, quia sanguis est missus, sed quia non justo modo, missus est, nec fortè etiam opportunè. *Verum nebulones nequissimi et ignavissimi id semper culpam convertere sategunt, non quod nocuit, sed quod per fas et nefas a cunctis vituperari exoptant.*"

It may be seen, by these last words, that Botal availed of the privilege which the Latin gives of such plain, blunt speech, both in prose and verse. Under this point of view we doubly felicitate ourselves in writing in French, the language, above all others, of politeness. But we may, I think, without, in the least, doing violence to the politeness in our language of which we are proud, apply to some of our cotemporaries, what Botal has said of some of his; to wit, that they study less to criticise what is injurious than what they wish that all should condemn, *per fas et nefas*, to make use of Botal's words.

If the Botals and Sydenhams have experienced such opposition in the use of their methods of abstractions of blood, what may we not expect, who shock received opinions still more than did our predecessors, and that without the support of such a great name?

Whatever novelty may happen to be contained in this little work, which we now make public, we shall, if it be necessary, put in practice the maxim of the English Hippocrates:—"Si qui reperiantur, qui vitio statim vertunt, si quis novi aliquid, ab illis non prius dictum, vel etiam inauditum, in medium proferat, hujus modi ego homines æquo me animo laturum spero."†

* See Sydenham, *Opera Medica*, vol. i. p. 74, ed. 1736.

† *Ibid.* p. 4.

NEW RESEARCHES

ON

ACUTE ARTICULAR RHEUMATISM

IN GENERAL.

PRELIMINARY CONSIDERATIONS.

ON a first view of the subject, it would seem that nothing could be more forbidding, or, one might say, more worn out, than a history of rheumatism in general, and of acute articular rheumatism in particular. It is not so, however; and I venture to hope that the researches which constitute the object of this work will offer some interest and novelty. They will prove, if I am not much deceived, that upon this subject, as well as upon many others, there was something for us yet to glean after our predecessors; and that it was destined to be submitted to that great law of progress and reform, which animates, fecundates, and governs in medicine as in all other things.

The newest and the most curious point of view of these researches is, without doubt, the coincidence of inflammation of the sero-fibrous internal and external tissues of the heart (*rheumatismal* endocarditis and pericarditis) with acute articular rheumatism.*

It is now about three years since observations collected with care presented to me this important connexion. I will, however, state upon what occasion I was led to fix my attention on the leading fact which occupies us. In auscultating the sounds of the heart in some individuals still labouring under, or convalescing from, acute articular rheumatism, I was not a little surprised to hear a strong, file, saw, or bellows sound (*bruit de râpe, de scie ou de soufflet*), such as I had often met with in chronic or organic induration of the valves, with contraction of the orifices of the heart. Now nobody would suspect an affection of this kind amongst the majority of persons who suffered from rheumatism and were submitted to our examination. Many of them were for the first time affected with articular rheumatism, and had hitherto enjoyed the most perfect health. I then called to mind other cases of acute disease of the heart, during the course of

* Inflammation of the internal membrane of blood-vessels often accompanies acute articular rheumatism, and I intend, hereafter, to treat on this point, which is, in some measure, extension of that which is now about to occupy us.

which I had heard the bellows and file sounds, and I resolved to explore, attentively, the heart and its functions in all those affected with rheumatism whom I should meet with. Thanks to this exploration, I soon discovered that an acute affection of the heart, in cases of acute articular rheumatism associated with violent fever, was not a simple accident, a rare, or as it were fortuitous complication, but in truth the most usual accompaniment of this disease.

I shall now endeavour to determine the precise law of this coincidence in the first chapter of these researches. First, however, I shall exhibit our knowledge in relation to this matter, before I entered upon the present work.

People long ago talked vaguely of gout flying to the heart, of rheumatism translated to the heart, &c. &c. But as the nature of these gouty and rheumatic metastases had never been determined, they were considered to be accidents and not very common occurrences.

A little later, in speaking of rheumatic metastasis, observers placed, it is true, pericarditis among the number of accidents which these metastases were capable of producing; but they spoke of it slightly or incidentally. It will not be amiss to make known with a little detail the opinions of some celebrated authors on this matter. And first, is it not singular enough that one of the greatest observers of the last century, Stoll, has absolutely said not a word on rheumatic inflammation of the heart; he who has at such length, and so happily, insisted on so many other rheumatic fluxions or inflammations, such as pleurisy, sore throat, dysentery, catarrh, and even phrenzy?

In a passage of his immortal *Essay on Diseases of the Heart*, Corvisart said, "that he was inclined to believe rheumatic and gouty affections to be, among others, a very frequent cause of one of the three kinds of adhesion of the pericardium, which he admits." Nevertheless, in treating of the causes of pericarditis in general, this illustrious physician does not utter a single word on the coincidence of this affection with articular rheumatism. Nor has M. Laennec mentioned this coincidence. It appears, likewise, to have escaped the notice of Chomel, as may be seen in reading his dissertation on rheumatism, and many published accounts of his clinic.

After reporting* a case of pericarditis, consecutive on the disappearance of a rheumatic affection, and which was fatal in twenty-seven hours, Professor Andral thus expresses himself, (in a note): "Rheumatic metastasis is not always followed by pericarditis, by pleurisy, or by pneumonia. The predominant phenomenon, in more than one case of this kind, is the lesion of function, which appears to be more serious than the lesion of texture. The same cause, which in the same day will produce pain in ten different articulations, all of them returning to the healthy condition as rapidly as they become diseased; this same cause, I say, may also, whilst its influence is exerted on some internal part, determine there—1st, a simple modification of

* Medical Clinic, vol. i, 2d ed. 1829.

action or dynamic ; 2d, a lesion of organization. This second lesion is but consecutive on the first, and is more rare than it."

These reflections of Andral are, in the main, perfectly just ; but it seems to me that we must not always confound under the same point of view of its seat, both the modifications of action and the lesion of organization, which may arise, whilst the rheumatic cause is directed on some internal part. But I shall return, farther on, to this nice point in the history of rheumatic affections.

Louis, in his excellent memoir on pericarditis, when treating of the causes of the disease, has not spoken of its coincidence with acute articular rheumatism. In the following passage, in the introduction to his work on diseases of the heart, Dr. Hope thus expresses himself on the subject which occupies our attention : "In acute rheumatism, there is no danger more common or more formidable than inflammation of the heart and of its membranes. If it be neglected when it exists in a high degree, (and even then it constitutes one of the most obscure and insidious diseases,) the patient sinks almost always under the immediate effects of the attack, or lives yet a little while a martyr to an incurable organic affection of the heart." At the time when I was making the researches recorded in the *Clinical Treatise on Diseases of the Heart*, I had no knowledge of the above assertion of Dr. Hope, to the development of which he has not devoted any part of his work. If he had well observed a large number of cases of rheumatic pericarditis, he would not have said that the patient almost always sinks under its immediate effects carried to a high degree, and that even then it constitutes one of the most obscure and most insidious of diseases. Whoever will carefully read the work of Dr. Hope, which is otherwise an excellent one, will admit that this acute observer has not added to what was previously known upon the coincidence of acute articular rheumatism with pericarditis, and that the coincidence, perhaps yet more frequent, of the same disease with endocarditis was not even known to him.

So true is it that Dr. Hope had not developed this important subject, that he has not even said a word on it in the chapter which he devotes to the inflammation of the interior of the heart and arteries, and in which he has done little more than repeat what we had already published in our *Treatise on Diseases of the Heart*, in 1824, when speaking of the same subject. Before our time, this inflammation was so little known that it had not even received a distinctive appellation, and had never been described separately.

In fine, an unanswerable proof of the novelty of the fact which we announce, is, as we shall see farther on, that it is generally enough contested still, notwithstanding what we have said in the *Journal Hebdomadaire*, in the *Dictionnaire de Medecine et de Chirurgie Pratiques*, in the *Clinical Treatise of Diseases of the Heart* especially ; and notwithstanding, also, what many young physicians, especially Dr. Desclaux,* who assisted at our observations have written.

* See Inaug. Dissert. Paris, 1835.

CHAPTER I.

Determination of the Law of Coincidence of Endocarditis and Pericarditis, or of Inflammation of the Internal and External Sero-fibrous Tissues of the Heart, with Acute Articular Rheumatism.

I SHALL divide this chapter into two parts. In the first will be exhibited the generalities of my subject, and the exact relationship of endocarditis and pericarditis with acute articular rheumatism. In the second, I shall succinctly relate a certain number of new special facts in support of what I shall have advanced.

 PART FIRST.

GENERAL VIEW AND DISCUSSION OF THE SUBJECT.

I.

Before bringing forward the new facts, proofs of which I have submitted in the present work in addition to what I had previously announced in other places, upon the coincidence of endocarditis and pericarditis with acute articular rheumatism, it behoves me to repeat here the passages in the *Clinical Treatise on Diseases of the Heart*, relating to this subject, as follows :

“Pericarditis exists in about one half of the patients affected with acute articular rheumatism. Under this point of view, pericarditis may, in some measure, be regarded as one of the elements of the disease called acute articular rheumatism, which considered under a more exact and larger point of view than has yet been done, constitutes an inflammation of all the sero-fibrous tissues in general, developed under a special influence. Now the pericardium being of a sero-fibrous nature, like the tissue which is the seat of rheumatism properly called articular, it is not astonishing that pericarditis so often coincides with this last ; that the rheumatism of the pericardium, in a word, takes place under the circumstances which produces a rheumatism of the articular synovial membranes and of the fibrous tissues upon which they are placed, which is, in fact, but an articular pericarditis.”

“Endocarditis like pericarditis, manifests itself under the same influences as acute articular rheumatism, during the course of which it often manifests itself. In truth, as this inflammation can thus be developed in a manner purely metastatic, according to the expression of some pathologists, it is not the less true, that more frequently, at least from the facts within our own experience, the internal sero-fibrous tissue of the heart is affected simultaneously

with that of the articulations. Moreover, rheumatic endocarditis and pericarditis almost always accompany each other."

"Up to the present time the acute phlegmasiæ of the heart concomitant with rheumatism had been entirely misunderstood in the great majority of cases; and as they had not been properly treated many must have passed into the chronic state. After these organic lesions of the heart, upon the origin of which so few authors had left us any satisfactory explanations, appear serious lesions of the valves and the gouty asthmas of certain practitioners."

"Let no one suppose that the above ideas constitute one of those idle theories which reasonable minds have henceforth renounced forever. By no means. Every day, at the bed side of the sick, true observers can appreciate at their real value the reflections which we submit to their enlightened judgment. Let them attend those clinics where they see acute articular rheumatism last thirty, forty, and more days, and they will see whether, as some classical practitioners aver, the febrile reaction which outlasts the inflammatory period of the rheumatism be a new kind of essential fever; or whether it does not belong, on the contrary, in a great many cases, either to pericarditis or endocarditis, or to an endo-pericarditis misunderstood."

These propositions, which are extracted from my *Clinical Treatise on Diseases of the Heart*, are not, I repeat, vain hypotheses so justly banished from the domain of exact and positive medicine; but are truly inferences which flow naturally and as of themselves from the comparison of a great number of facts well observed, well recorded, and well weighed. It is necessary now to recal these facts to our readers, for the detail of which we refer to the work in which they have been reported.

II.

The number of separate observations, contained in the two chapters of the above-mentioned treatise consecrated to pericarditis and endocarditis, amount to ninety-two, viz. thirty-seven of pericarditis and fifty-five of endocarditis. Now, of these ninety-two observations, we have thirty-one in which pericarditis and endocarditis coincided with articular rheumatism, viz. seventeen of pericarditis and fourteen of endocarditis. Thus, then, about one half of the cases of pericarditis and one fourth of those of endocarditis existed in rheumatic individuals. It follows, therefore, that among about a third of the individuals affected with pericarditis and endocarditis, articular rheumatism was also present.*

It is demonstrated by these calculations that inflammation of the pericardium and of the endocardium has coincided with an articular rheumatism in a third of the cases. But we are far from asserting,

* See observations 8, 9, 12, 13, 14, 15, 16, 17, 18, 19, 27, 30, 31, 32, 33, 34, 35, 41, 42, 51, 52, 81, 84, 85, 86, 87, 88, 89, 90, 91, and 92 of the *Traité Clinique des Maladies du Cœur, etc.*

that in the remaining two thirds there did not exist articular rheumatism. In fact, many of these cases are deficient in etiological details; and it appears probable enough, that amongst these last a certain number belonged also to the list of rheumatic pericarditis and endocarditis.

III.

Among the circumstances which might have put us at least on the track of the discovery of the fact which we are developing, we should, unhesitatingly, place in the first rank that violent fever with palpitations, and a pulse full, strong and vibrating, sometimes irregular and intermittent, which often continues after the articular affection. To find the explanation of this kind of pathological mystery, to localize, in fine, the rheumatic fever without rheumatism, as it is called, it would have sufficed to submit to an attentive and rigorous exploration the state of the circulatory system in general (including the blood), and that of the heart in particular. But that was never even dreamed of. Some practitioners seem to have done more. From an attachment to the doctrine of the essential nature of so many fevers, this revered dogma, of which, notwithstanding their efforts, the discovery of the phlegmasiæ of the digestive canal, of that especially of the glands of Peyer, had sapped the foundations, they idiopathized, in some measure, as a requital, the fever called rheumatic. It is true, that they are on the point of changing it back, after their manner; and if we may put faith in a certain journal, they are about referring the rheumatic fever without rheumatism to typhus fever; that is to say, to a fever which has for its anatomical character an affection of Peyer's glands!

This localization appears to us unfortunate enough, at least in the cases where all the signs of pericarditis, or pleuritis with effusion, or endocarditis, &c., are so evident that they cannot escape the least experienced eye. One might, in truth, say that certain observers are not less ready in finding what does not exist, than in misunderstanding what does really exist.

IV.

However this may be, we have, as already stated, laid down the position in the *Clinical Treatise of Diseases of the Heart*, that in nearly half of the cases of acute articular rheumatism, this disease coincided with an inflammation of both the sero-fibrous tissues of the heart.

The calculation of this coincidence, or of this relationship, has been taxed with exaggeration, and all kinds of arguments have been advanced against us. The following are the two principal objections. One class has reproached us with imagining the existence of pericarditis and endocarditis; the other class has responded to our assertion, that if, in truth, we had so frequently met with the exist-

ence of pericarditis and endocarditis, this was owing to the medical constitution, and that it would be wrong to generalize an exception, a fact of accidental coincidence.

As to the first objection, or rather the first accusation, it is too deficient both in politeness and medical logic for us seriously to answer it. As to the second, we refer to future medical constitutions; and we shall owe the greatest obligations to those who, like Professor Chomel in the last summing up of his clinic, already cited, shall be able to offer to us forty-nine well observed cases of acute articular rheumatism, in which no example of pericarditis or endocarditis can be pointed out. We cannot forbear from remarking, on this occasion, that the cases in question are a complete answer to the objections presented above; to wit, that the medical constitution has been the cause of the coincidence of these two diseases with rheumatism in the cases observed by us. In truth, we gathered these facts at the same time that M. Chomel met with ones apparently contradictory. Now the medical constitution was the same in both. What then means this apparent contradiction? That we have attentively sought pericarditis and endocarditis, and that others have not sought them. And, certainly, to find we must seek, and seek with much care, and with a perseverance that nothing can weary or divert from its purpose.

V.

What then, we shall be asked, are the certain indications of the inflammation of the sero-fibrous tissue of the heart (pericarditis and endocarditis)? As I have exposed them at length in the *Clinical Treatise of Diseases of the Heart*, I shall be content here to repeat those which are most evident.

The existence of pericarditis is certain in the individual affected with acute articular rheumatism, when the following symptoms are present: a dull sound over the precordial region, much more extended than in the normal condition (double, triple in every direction); arched form of same region; remote beatings of the heart, but little or not at all sensible to the touch; sounds of the heart distant, obscure, accompanied by different abnormal sounds, some arising from the rubbing of the opposite coats of the pericardium against each other, others from the complication of pericarditis with valvular endocarditis; a pain more or less acute at that region of the heart;—palpitations, irregularities, inequalities, and intermissions of the pulse are sometimes conjoined with the above symptoms.

The coincidence of endocarditis with acute articular rheumatism is, to our minds, certain, when the following signs are present.

Bellows, file, or saw sound in the precordial region, with a dulness of this part on percussion, to an extent much more considerable than that in the normal state, and which, also, sometimes presents, but in a less degree than in pericarditis with effusion, an elevation or abnormal

arching; the movements of the heart elevate with force the precordial region; and they are often irregular, unequal, intermittent, and accompanied at times with a vibratory trembling. The pulse is hard, strong, vibrating, unequal and intermittent, like the beatings of the heart.

It appears from the above that there are signs common to pericarditis and endocarditis, and that the differential physical signs are not always well marked. Cases, also, present themselves in which it is difficult enough to determine whether there is pericarditis or endocarditis, and whether one of these affections, once well recognized, exists alone or combined with the other. These are the cases in which pericarditis may be present without an evident effusion, and with a production only of false membranes. Then, indeed, the beatings of the heart are sensible to the touch, as in simple endocarditis, and the saw and bellows sound, the vibratory trembling of the precordial region, may be present in this case as in endocarditis. After all, this distinction may be thought really more curious than useful. It is enough for the practitioner to know that one of the two exists, since the treatment is essentially the same, whether there be only pericarditis or endocarditis, or whether there be endo-pericarditis.

Once again, in well marked cases nothing is easier, with experience and habit, than to recognize the presence of endocarditis, or of pericarditis, or of endo-pericarditis with rheumatism. But in these phlegmasiæ, as in all the others, there exists nice degrees; and I acknowledge that in such cases the diagnosis is both difficult and uncertain. It is, indeed, only by a long attendance on hospitals that a necessary tact for such a diagnosis can be obtained. It is not, finally, by facts of this last kind that we pretend to be able to demonstrate the law of coincidence of endocarditis and pericarditis with acute articular rheumatism. We shall only remark that this last would very often itself be misunderstood, in its nicer degrees, if, instead of constituting external parts, the articulations were changed into internal organs; and, yet still, although they might have been misunderstood, they would not the less have existed. Such precisely is the rheumatism of the sero-fibrous tissues of the heart.

When individuals, in whom the above signs are recognized, die, examination of the body discovers the anatomical characters of pericarditis and endocarditis, fully proved in observations 1, 4, 5, 6, 7, 13, 14, 19, 43, 45, of the *Clinical Treatise on Diseases of the Heart*.

This is the place to recur to the distinction, so important to be established between the simple modification of action, or dynamic, and the lesion of organization, which, as M. Andral has well said, can be equally determined by the rheumatic cause, whilst it exerts its influence on some internal part.

To distinguish between the two kinds of lesion of the heart we are speaking of, it is necessary to have recourse to a careful observation of the signs furnished by the physical methods of exploration, such as percussion and auscultation. Without it, the distinction is absolutely impossible; and it is because we rely on the facts furnished

by the dynamic functional signs, such as palpitations, irregularities, intermissions of the beatings of the heart and pulse, &c. that physicians daily mistake for organic lesions of the heart simple nervous affections, and *vice versa*.

The frequency of errors of this kind would be, indeed, almost incredible, did we not know how many physicians are even now too little familiarized with percussion and auscultation; and what deserves remark is, that not a few commit this error in their own cases. It would be too tedious to detail here all that would be necessary to avoid the above error. It will be sufficient to mention that the lesions of the heart, called nervous or dynamic, when they are pure or simple, never give the physical signs just announced. Hence, every time that we discover pains, palpitations in the præcordial region, irregularities, intermissions in the beatings of the heart, with or without a tendency to syncope, oppression, &c., and that these dynamic phenomena are not accompanied with abnormal dulness in the præcordial region, and permanent bellows, saw, or file sound, &c., &c., we may rest assured that there does not really exist endocarditis or pericarditis.

If the dynamic or functional phenomena, of which we are speaking, are connected with an external rheumatic affection, the lesion on which they depend is to endocarditis and pericarditis what the simple rheumatic neuralgias of the limbs are to arthritis and rheumatism. This lesion is a sort of *rheumatic neuralgia* of the heart, either isolated, or combined with a neuralgia of the phrenic, intercostal, &c., nerves. But the neuralgia of the heart is announced by an irregular movement, and not by a true pain; because the nerves of the heart are nerves of motion, and not of feeling; and, under this point of view the word *neuralgia* is not suitable here, any more than in the cases where the lesion which this word represents affects the external nerves destined only to motion, such as, for example, that of the seventh pair (facial nerve).

VI.

An objection which will not fail to be made is this:—It is well known, we shall be told, by every physician, that nothing is more serious than an inflammation of the heart. Now acute articular rheumatism scarcely ever proves fatal;—of course, it is not possible that this inflammation of the heart can be as prevalent as is alleged.

The defect in this kind of reasoning is very apparent. Inflammation of the heart, thus far, has appeared so fatal only from the circumstance that it was only detected in those alone who sank under it. Already M. Louis, in his memoir, has proved that the fatality of pericarditis has been exaggerated. Facts of my own more than confirm the assertion of this gentleman as to pericarditis, and moreover they put to rest all doubts that intense endocarditis, which is much more serious generally than pericarditis, is, in many cases, not fatal even under improper treatment.

If it be true that acute inflammatory affections of the heart are much less fatal than has been supposed, it is but too true, at the same time, that while persisting, they ordinarily leave in their train lesions called *organic*, under which the invalid finally sinks, when they affect those parts whose functions are necessary to life. This is what actually takes place when endocarditis has been followed by thickening, induration, adhesions, vegetations of the valves with deformity, obliterations of these valves, contractions of the orifices, dilatation of the cavities, hypertrophy of the muscular substance, &c.

I shall apply (always with suitable restrictions,) to rheumatic pericarditis and endocarditis, what Stoll said of the other rheumatic phlegmasiæ, viz., that they are generally less serious than what he terms *true inflammation*.* It appears to me that one of the chief causes of this difference arises from the fact that inflammation called *rheumatic*, extends much in surface, but not in depth, whilst the *true inflammation* of Stoll acquires in depth what it wants in surface: the first ought to yield much more easily than the second. It will be said that in rheumatic inflammations the great number of parts, in which the affection has its seat, in a measure serves the purpose of revulsion; and that the blood and nervous fluid, attracted at the same time to so many different points, cannot be carried in sufficient quantity to any of them to constitute a deep and lasting inflammation. However it may be with these speculative views, which I value very little, it is still true that rheumatic pericarditis and endocarditis are not so serious as one would, *à priori*, suppose them to be, and that pericarditis in particular, the only one of these two affections upon which authors have imparted any knowledge whatever, is not generally mortal, as Corvisart has taught us.

VII.

But on this point more than enough has been said. Let us hasten to record briefly, the new facts which we have gathered.

From the beginning of August, 1835, to that of October following, I have met with twenty new cases of articular rheumatism, either recent or of some standing, of which the following is the description under the point of view which now engages our attention.

I have placed these twenty cases under three heads. The first comprises those relating to general acute articular rheumatism, accompanied by fever of more or less violence.

The third head is confined to cases of mild articular rheumatism, without fever.

* I must confess, however, that I cannot find in Stoll a precise definition of what he calls true inflammation, nor what he designates by the name of rheumatic inflammation. I imagine that by the first of these expressions he means a fixed inflammation, in some sort phlegmonous, which terminates in suppuration. We shall see, farther on, that the difference which exists between the two kinds of inflammation compared by Stoll, has no reference really to their nature, which is always the same, but to their degree, their form, their seat, and their causes,—all these things being very variable.

Between these two I have placed a second division, containing cases in which a lesion of the heart, called organic, is met with in individuals formerly affected with prolonged acute articular rheumatism, and in which relapses had occurred. This head is closely allied to the two others ; it supports the first, and, reciprocally, is supported by it. In fact, only half of a disease is known when it is studied in the acute stage alone. To know it fully it must also be examined in the chronic stage. Now what is this organic lesion of the heart in subjects formerly affected with articular rheumatism, if not endocarditis and pericarditis in a chronic form ? that is to say, with accidental productions, transformations, thickening and induration of tissues formerly inflamed, &c.

Let us begin with the four last cases (17, 18, 19, 20), in which the rheumatism was without fever. In respect to them we would only remark, that they existed without any affection of the sero-fibrous tissues of the heart. They confirm what we have already said of similar cases before observed, viz : that the law of coincidence of endocarditis and pericarditis with an acute articular rheumatism, does really apply, with some few exceptions, only to cases in which this disease is diffused and accompanied by fever.

Among the nine cases of the first head, six exhibited the most certain signs of rheumatic inflammation of the sero-fibrous tissues of the heart (1, 2, 3, 7, 8, 9). In the three other cases this coincidence was less evident ; nevertheless it existed really in two of them (4, 5), and in one only it appeared to be doubtful (6).

Thus then, in eight times out of nine, an acute rheumatism of many joints, was accompanied by rheumatism of the sero-fibrous tissues of the heart. The seven cases comprised under the second head cannot be taken into regular account in the present question, since the organic affection of the heart (to which was joined in some patients an organic lesion of the aorta) was not connected with articular rheumatism actually existing, but rather with old attacks of that malady. Could it be indeed by chance that out of seven cases of this disease not one would be found in which it was not preceded by a violent rheumatism of long continuance ? Could such an opinion be sustained in opposition to those other facts which show that an acute articular rheumatism, actually existing, is so often accompanied by endocarditis or pericarditis, that is to say, of rheumatism of the sero-fibrous tissue of the heart ? Would it not be more correct to admit, as we have elsewhere endeavoured to demonstrate,* that it is to this last affection, illy understood till now, that we must attribute a large portion of the lesions of the heart called organic.

In fine, can we from these new cases be accused of exaggeration in saying, that in one-half of the instances of diffused acute articular rheumatism with much fever, the sero-fibrous tissue of the heart is found affected in like manner as the joints ?

Ought we not on the contrary to make a formula of the law of

* Clinical Treatise on Diseases of the Heart.

coincidence, as follows : In the great majority of cases of diffused acute articular rheumatism with fever, there exists in a variable degree a rheumatism of the sero-fibrous tissues of the heart. This coincidence then is the rule, and the non-coincidence the exception.

PART SECOND.

NEW OBSERVATIONS IN SUPPORT OF THE PRECEDING DOCTRINE.

I.

Cases of Diffused Acute Articular Rheumatism, with Fever of more or less Violence.

CASE I.—*Sept.* 36, 1835, Dr. Bouvier, at La Charité Hospital, requested me to see a patient who presented symptoms of an affection of the heart, coinciding with acute articular rheumatism. It was a young man, aged 19, who entered September 3. The articular rheumatism for which he had been admitted had been of a week's continuance, was accompanied by a strong fever, and had attacked almost all the joints. The first and second day after his admission a potion, containing eight grains of tartar emetic, was administered; copious evacuations up and down followed, but without relief. The following days he was bled three times, after which the disease was permitted to take its course. Two fresh bleedings were however practised; and when an affection of the heart was detected leeches were applied to the precordial region.

Sept. 26.—I observed the following symptoms—scarcely had I applied my hand over the heart when I felt a very distinct vibration, which immediately led me to announce the existence of the bellows, file, or saw sound. Accordingly, on applying my ear to the chest a double saw sound was heard, more perceptible at the systole, with a kind of dry scraping towards the apex of the heart, which obscured the valvular flapping, or rather absorbed it almost completely. The beatings of the heart could be distinctly felt by the hand to an extent more considerable than in the healthy state, and the dulness of the precordial region occupied a space at least double that of the healthy condition, being four or five inches each way, without evident arching of that region, which was painful only under a strong percussion. The beatings of the heart and pulse were very frequent, 124 in the minute. The joints of the extremities, of the superior especially, were yet somewhat tense to the touch, swollen and painful: prostration, loss of flesh, complexion rather muddy, or of a dirt colour.

Diagnosis.*—*Endo-pericarditis, with hypertrophy of the whole*

* At this time it appeared to us that there was no exudation of false membranes, which was probably one of the causes of the extensive scraping sound that was heard. At all events, the swelling of the valves and in consequence the contraction of some of the orifices, appeared to us to concur in the production of this phenomenon.

heart.—I revisited this patient October 4th ; the joints were free from pain, but the fever continued to a high degree (128 pulsations). The body was covered with *sudamina*.* The dulness of the precordial region was at that time accompanied by a perceptible arching, and with the hand, we could distinguish, but obscurely, the beatings of the heart.† The extensive saw sound is replaced by a rasping one which does not completely mask the valvular flapping.

October 23. Fever ; 128 to 132 pulsations. The patient motionless in his bed, is fearful of the least touch ; his limbs are supported by cushions and have again become painful ; his skin is dry ; marasmus well defined. He will not permit percussion on the precordial region, but we noted the phenomena following simple touch, inspection, and auscultation. With the hand we feel obscurely the beatings of the heart, which are regular and without vibration ; the arching is scarcely marked, but it is not altogether effaced ; the rasping sound is doubtless less, but is yet very distinct over all the precordial region, and has its maximum at the spot corresponding with the left cardiac orifices. Respiration is hurried, 32 in the minute ; speech broken, as if a pleuritic effusion had taken place, which seems to us to be very probable. When quiet there is no pain, either in the region of the heart or at the sides ; and no more cough than in health.

Food increased. He did not appear to be afflicted much with the serious condition in which he was, and thought himself better than before.

CASE II.—A hack-driver, aged 35 years, was admitted August 12, 1835, in the fifth or sixth day of a violent articular rheumatism ; the joints of the feet, knees, hands, wrists, elbows, and shoulders having been attacked. No evident arching at the precordial region on his admittance into the hospital. Tumultuous beatings of the heart sensible to the hand, which they raise up with force, as true palpitations would do : after several hurried beatings, an intermission takes place. The shock of the heart against the chest conveys to the ear, applied over the precordial region, a very pure metallic tinkling. The valvular sounds (*tic-tac* of the heart) are dull and stifled. The precordial region gives out a dull sound about three inches square. Pulse strong, full and vibratory, with intermissions and irregularities, like the beatings of the heart, which are 120 in the minute ; the skin is hot and bathed with sweat.

16th and 17th—the fifth and sixth days after admission—the heart was completely free ; regular beatings at 84–88 ; valvular sounds healthy and clear. About two inches square of dull sound.

20th.—An exposure to cold is followed by a relapse. Same phenomena in the region of the heart as on his admission. These yield once again to treatment.

24th.—Another exposure to cold followed by another relapse ; 124 to 128 pulsations ; the intermissions and irregularities of the

* The patient had had for many days very copious sweats.

† The pericarditis was undoubtedly then accompanied with effusion, and the rasping sound was caused by the lesion of the valves and orifices.

pulse and the beatings of the heart, the obscureness of the sounds, &c., are manifested a third time. This lasts during the two following days, diminishes on the 27th and 28th, and then vanishes. The pulse continues, however, to be vibratory, and the beatings of the heart very strong, with obscureness of sound, long after the intermissions.

September 13.—When the patient was discharged, there was no sign of a disease of the pericardium or endocardium, if we except a very obscure pericardiac rasping.

Six bleedings at the arm, scarified cups twice, and two blisters to the precordial region, during the course of the disease. Twenty-eight bowls* of blood were taken away, amounting to about seven pounds.

Notwithstanding the several relapses, brought on by his imprudence, he was cured by the twenty-fifth day; but he had not yet recovered his flesh and ordinary strength.

CASE III.—A woman aged 35 years, of a truly monstrous fatness, was delivered August 25, 1835. She has had, for five days past, one of the most violent articular rheumatisms that could be met with: all the joints were affected, and she was rendered perfectly motionless; fever very high. The excessive size of her breasts prevented us from satisfactorily practising percussion, but auscultation discovered a very distinct bellows sound. We did not detect irregularity or intermission in the beatings of the heart and pulse, till the seventh day after the admission of the patient; the joints then being almost without pain.

First day of treatment—bleeding to six bowls in the morning and four in the evening. In the interval scarified cups over the precordial region to the extent of three bowls. (In all 52 oz.) Second day—four bowls; forty leeches. Third day—four bowls. Fourth day—three bowls. Fifth day—most of the joints are free from swelling; the pain and the fever have disappeared; a slight bellows sound remains. Convalescent—soup; compresses on the joints, which are yet slightly swollen; two pills of gummy ext. opium. Sixth day—irregularity of pulse; omit the soup. Eighth and ninth days—pulse has become regular. At the termination of the copious sweats, sudamina, as often happens, covered the skin, also a miliary eruption and red spots.

September 11.—Fourteenth day of treatment—convalescence was established; pulse 80 to 84; no fever; joints freely moved, and only some obscure pains; soup resumed; food is gradually increased. On subsequent days, the small joints of the hand were slightly re-attacked; but it was only necessary to cover them with moderately tight compresses smeared with mercurial ointment.

The opium and baths were continued till September 25, when the supply of food was augmented, and she began to walk. The bellows sound had quite ceased. She left, October 5, quite well, and the food was increased to the half allowance sixteen days after admission. She complained of some pain in her shoulders, which, however, she moved very well.

* One bowl is equal to four ounces.

CASE IV.—*September 23, 1835*, a man, aged 28 years, was admitted after having been attacked six or seven days before with an acute articular rheumatism, occupying chiefly the joints of the feet, insteps, and knees, and accompanied by a violent fever; pulse 92. The sounds of the heart are obscure, stifled, dull as it were, and scarcely discernible; and yet on the first day that we saw the patient there was no abnormal dulness in the precordial region, but on the next it was very different. At this time a dulness of three inches and a half square was evident, with slight arching of the precordial region, and the sounds of the heart distant and deep; the hand could not feel its beatings.

Repeated bleedings subdued the disease in five or six days; the dulness ceased, and the sounds were much nearer to the ear. These remained as if muffled, owing to the presence of a layer of lung which covered the pericardium. That this was the case, was proved by percussion, which gave a clear sound, and by auscultation, which distinctly revealed the respiratory murmur at this point.

To what else but to an effusion in the pericardium, the consequence of a rheumatic affection of this membrane, could be attributed the phenomena above mentioned? The endocardium, and especially the valves, were they affected? It might have been, but there was no positive proof.

CASE V.—A young man, suffering from acute articular rheumatism, accompanied by a violent fever, was admitted *September 5, 1835*. Beatings of the heart very strong, accompanied by a bellows sound, perfectly distinct. On the fifth day of treatment, by repeated bleedings, the rheumatism had ceased, and with it the fever and bellows sound of the heart; the patient left the hospital fifteen days after his admission.

CASE VI.—*September 21, 1835*—A female, aged 30 years, affected during five or six days with acute articular rheumatism. Previous to admission, she had been bled three bowls, and twelve leeches had been applied. The rheumatism was of the feet and knees, principally on the right side, and the least movement made her cry out; circumference of right knee 12 in. 6 lines, that of left 12 in. 3 lines. Skin is stretched, shining, and marked by veins, more dilated than in the healthy state; pulse 124; heat, and abundant sweats, and sudamina about the neck. The violence of the fever did not coincide with the small number of joints attacked, and we thought that it might probably in part be caused by inflammation, or if you will, by rheumatism of the sero-fibrous tissue of the circulatory apparatus. There was no abnormal dulness in the precordial region, but the beatings of the heart were very strong and the valvular sounds much more dull than in the healthy state, which led us to think that there was a valvular endocarditis in the first degree,—that of simple irritation or hyperæmia; V.S. four bowls; scarified cups to the knees, three bowls; then compresses smeared with mercurial cerate slightly bound on; emollient drinks; diet (abstinence).

22d.—The pulse in the evening had fallen to 90.

23d.—Very striking amendment ; extends the right knee, and only suffers when the movement is quick ; the circumference of both knees lessened three lines ; V. S. 3 bowels.

24th.—Sounds of the heart quite clear ; no pain in the joints ; knees of diminished size ; is convalescent.

25th.—Right knee 11 in. 10 lines ; left 11 in. 8 lines ; resolution complete ; some baths finished the treatment.

She left the hospital, October 5th, well, thanking us much for having so soon cured her.

CASE VII.—*August*, 1835.—A female, aged 30, has had articular rheumatism twenty days, chiefly in the hands and knees ; fever strong ; pulse regular, full and vibratory ; 100 or 112 in the minute. The precordial region is raised by beatings strong and extensive, similar to true palpitations ; and in it can be heard a well pronounced bellows sound. The dullness occupies double the healthy space ; no pain in that region. Endocarditis with hypertrophy is evidently the chief affection at this time.

Taking into view the duration of the disease, the state of emaciation and weakness of the patient, I abstained from repeated bleedings ; and I announced that the case would be tedious. Some blood had been drawn before admission. Two V. S., one of four bowls and the other of three ; scarified cups, four or five bowls ; a large blister over the precordium ; digitalis externally (endermic method), and internally ; strict diet, baths, diaphoretic drinks, poultices to the joints were the means employed. The joints became entirely free many days before the fever, which still lasted with bellows sound and violent beatings of the heart.

On September 11, the bellows sound had much diminished ; the beatings of the heart were not so strong or extensive, and the fever of no account. She ate her quarter allowance.

13th.—She wished to be dismissed : no joint was affected ; heart calm ; bellows sound scarcely perceptible. Yesterday she walked about, up and down stairs, and felt no inconvenience in breathing.

It is to be hoped that, notwithstanding the long duration of endocarditis, there remains no germ of an affection of the heart called organic.

In this case, bleeding was not practised according to our method ; and the disease was spun out to the period generally assigned to it by authors, viz—forty to sixty days.

CASE VIII.—*August*, 1835.—A woman, aged 30 years, with an articular rheumatism of eight days' duration. She was a miserable beggar of Vitry, broken down by want. We bled her according to the ordinary way, and I predicted that the disease would be spun out ; the more so, as we detected the coincidence of endocarditis. There was, in fact, a clear bellows sound with palpitation and dull percussion ; pulse vibratory, and 120 ; abundant sweats ; sudamina. After very moderate V.S. 3 bowls, and by cups 5 bowls, tinct. colch. was given for ten or twelve days without any effect : pulse 104 to 108.

A large blister was put on the precordium, and ten to twelve grains pulv. digital. sprinkled on it daily ; the pulse became slower after its application ; the rheumatic fever diminished, then ceased entirely, and the patient wished to go away. However, as the bellows sound, though not so evident, still lasted, and as it was necessary for her to gain more strength, we concluded to detain her sometime longer. She had no pain either in the joints or in the region of the heart, and the respiration was quite free ; at least when at rest.

September 10.—She eats the half allowance. There was only a bellows sound, but very much less than at her admission, and only perceptible during the systole ; whereas when she was admitted it was double. She went away on the 13th ; pulse 72 and regular ; no palpitation ; easy respiration and felt well ; nothing abnormal except the slight bellows sound could be detected.

CASE IX.—September 2.—Mr. Bouvier showed me a rheumatic patient who was on half allowance. He had entered twenty-five days before. We detected the following symptoms—slight arching of the precordium, which is dull on percussion, to the extent of about four inches square ; a very strong double bellows sound, which towards the apex of the heart was accompanied by a dry pericardiac rubbing, and a sound somewhat crackling. As to the double bellows sound, properly so called, its maximum of intensity lay towards the aortic orifice, at the middle of the sternum. There, during the diastole of the heart, the bellows sound seemed to be produced by a true aspiration.

The pulse was *bis feriens* or *dicrotic*. It is not very rare to find the pulse to which this name is applied ; but I never felt it to such a degree as in the present case. At the hollow of the sternum the arch of the aorta presented in the most evident manner the double movement that I had felt at the radial artery.

This kind of pulse in an individual in whom there was a bellows sound, consequent on a rheumatic endocarditis excited powerfully my attention. Might it not be possible, that in this person there was an aspiration of a certain quantity of arterial blood during the diastole of the left ventricle allowed by the insufficiency of the aortic valves ? This is so much the more probable, as we have remarked that the bellows sound which is heard in the region corresponding with the aortic orifice gives during the ventricular diastole the idea of a true sound of aspiration. In this case of insufficiency of the aortic valves, we should discover during the diastole of the left ventricle a reflux in the heart, such as we observe in the right auricle and in the veins, in consequence of insufficiency of the tricuspid valves.*

Another case was shown me, by M. Lerminier, of rheumatism accompanied with endocarditis.

* Mr. Bouvier showed me next to the above patient one who presented this reflux, called venous pulse, in the clearest manner. The column of blood in the jugular vein could be distinctly seen descending quickly during the diastole of the right ventricle, then reflowing into the vein during the systole of this ventricle, the valve of which is defective.

II.

Cases of Organic Lesions of the Heart and Aorta arising from Old Rheumatic Affections.

CASE X.—*September 9, 1835.*—A man, aged 29, who after an acute articular rheumatism experienced palpitations and other accidents, which are commonly assigned to organic affections of the heart and large vessels. Fifteen months since he had rheumatism at the hospital Beaujon.

By exploration several times with the greatest care, we detected the following symptoms: The beatings of the heart shake all the lower part of the left side of the chest, the epigastrium, and even the umbilical region; they are accompanied with a double rasping sound, and with a metallic tinkling, owing to the stroke of the heart against the precordial region; its beatings isochronous with the pulse, raise the middle of the sternum and the corresponding part of the right side of the chest, even on a level with the bosom; and there can be heard a bellows or rasping sound which is double and stronger even than in the precordial region itself, at the same time that we can feel a fine vibratory trembling which is propagated to the arch of the aorta (the beatings of which can be easily seen at the hollow of the sternum), as well as to the carotid arteries; no devil sound.*

There is a dull sound on percussion from the right to left breast about nine inches; vertically the dull sound is four inches at the precordial region. There is also an evident arching at this part; the dullness extending vertically to about two inches below the clavicle; pulse regular and vibrating; no dyspnoea when at rest; has neither ascites nor anasarca, but cannot go up stairs without panting, &c.

From the above signs we could easily discover an enormous hypertrophy of the heart, with aneurism of the aorta, and induration of the left valves. V. S. two or three bowls only, as he was pale and thin. Eight days after admission he went away without much amelioration.

CASE XI.—In the early part of September 1835, we received in the hospital a man, aged 30 years, who had been at the St. Louis Hospital twice before for articular rheumatism, also at the Hotel Dieu and La Charité for the same disease, according to his statement. When first seen by us he was reduced by diarrhoea, and had ascites and anasarca. He died on the 17th of September.

Among the lesions found upon inspection of the body I will here only note the following. Milky hue of the external surface of the right auricle; tricuspid valve sensibly thickened at its free edge: a white, serous, and easily detached layer accidentally developed on the pulmonary portion of the right ventricle; some yellow points on the bicuspid and aortic valves; these are somewhat thickened but well formed; orifices of the heart free; a slight contraction of the ventricles, particularly of the left, whose sides are from eight to ten lines in thickness; old adhesions in the chest.

* A high degree of the bellows sound.

CASE XII.—*Sept. 23, 1835.*—A man was received, aged 23 years, with mild articular rheumatism, unaccompanied by fever, of fifteen days' duration. Three years previously he had the first attack. It was very violent and lasted six weeks. He had been treated by baths; palpitations followed; and now he presents all the signs of a serious organic affection of the heart. Strong beatings of the heart, which on the least fatiguing exercise become violent palpitations; these beatings are regular, 68 to 72 in the minute; pulse vibrating; the precordial region presents an evident arching, and gives a dull sound of four inches square. We can feel a fine vibratory trembling, and hear a double file and saw sound, which almost absorbs the valvular flapping. Towards the apex of the heart the first rasping sound is changed into a cooing, rather hoarse and stifled; the shock of the point of the heart corresponds with the sixth intercostal space; this and the fifth, as ascertained by measurement, are evidently enlarged. As he is thin, the beatings of the heart can almost be seen as well as if it were exposed; it is observed to return upon itself, to contract when the apex strikes the chest, and afterwards to dilate. The shock of the point of the heart isochronous with the pulse, does not appear to result only from the restoration of its position, but also because the blood, pressed on all parts by the systole, in reacting against the apex, which is moveable, gives it a brisk shock. There is no infiltration, and no evident anhelation, except in ascending a height, or after some fatiguing exercise.

There is evidently a large hypertrophy of the heart with induration, thickening of the valves, with much obstacle to the circulation, and perhaps white layers on the pericardium; all these lesions are the result of misunderstood endo-pericarditis, and which, as is commonly alleged, has passed to the *chronic* state. The treatment can only be palliative; radical cure is not in the physician's power.

He left the 10th, in the same state. The day before, he went upstairs with but little anhelation, but with increase of the palpitations of the heart.

CASE XIII.—*Sept. 5, 1835.*—A woman, aged 49 years, entered the hospital with all the signs of a serious organic lesion of the heart, five months ago, from an acute articular rheumatism, for which she was three months at the Hotel Dieu. She had been treated by baths, and was not once bled.

There is a double bellows sound in the precordial region, whose maximum of intensity corresponds with the left orifices. This sound completely absorbs the valvular flapping; it is accompanied by a distinct purring and trembling. The beatings of the heart are precipitous, tumultuous, intermittent, irregular, and of a greater extent than in the normal state; pulse 140, small, unequal, irregular, intermittent; jugular veins swollen; face blue and livid; anhelation; anasarca.

Diagnosis.—Hypertrophy of the heart consecutive on a rheumatic endocarditis, terminating in thickening and induration of the valves.

Under the operation of rest, digitalis, a strict regimen, and diuretic drinks, the anhelation was calmed, the pulse became more regular and

voluminous, and fell to 68 ; the anasarca was dissipated, and the beatings of the heart were only accompanied by a double sound, dry like the rubbing together of a rather coarse parchment. Rheumatic pains came on in the shoulders without swelling or redness. She eats a quarter allowance, and is tolerably easy when at rest : but it is almost certain that the least exercise will bring back all her complaints.

CASE XIV.—*September 11, 1835.*—A woman, aged 38 years, has experienced during the last six or seven years numerous attacks of acute articular rheumatism, for one of which she was at the Hotel Dieu five months. After this attack she had palpitations and a sense of suffocation, particularly in going up-stairs. She was not swelled ; for a fortnight past she feels fresh pains in the joints, but above all in the superior external part of the right thigh ; and the palpitations have increased. She has no fever, and none of the joints are red or swollen. The region of the heart gives a dull sound to the extent of five and a half inches transversally, and four inches longitudinally. In all this extent the heart can be felt beating strongly ; the apex, altogether directed to the left side, as if situated transversely, strikes the chest two or three inches farther out than in the normal state. In all the precordial region, in whatever position the patient may be placed, there is heard a strong file and saw sound which masks and absorbs the valvular flapping. This is heard over all the anterior part of the chest ; but without any sensible purring : pulse irregular, intermittent, little developed, but vibratory ; no devil sound in the carotids ; jugulars dilated ; lips blue.

Diagnosis.—*Enormous hypertrophy of the heart, with induration and thickness of the valves, consecutive on a rheumatic endocarditis or endo-pericarditis.*

This day, November 6th, the patient is still in the hospital.

CASE XV.—*September 29, 1835,*—A house-painter, aged 41 years, and married, of a delicate and lymphatic constitution, with light hair, subject to catarrh, and supposed to have an organic lesion of the heart. Examined on the 30th.—From his skeleton appearance, hectic fever, pulse 112 to 116, regular and moderately developed, mucous sputa, which filled his spitting-box, we presumed, at first sight, a tuberculous condition of the lungs. A cavernous sound in the right subclavian region, with obscure tinkling as of a cracked pot, and a semi-amphoric blowing, left no doubt of the existence of a vast pulmonary excavation ; at the posterior and superior part the sound was generally very obscure ; the shoulder-blades were raised like wings ; the chest narrow, compressed and elongated.

The organic affection of the heart was afterwards the object of our search.

What struck us at first was the size of the heart, whose beatings raised powerfully the precordium ; the apex was opposite the sixth intercostal space, which was widened, as well as the fifth, without evident arching of this region. The dull sound was 3 inches 4 lines in both directions. The impulsion was strong and regular ; a file or saw-sound existed in all the precordial region, and in all the

anterior part of the chest, masking almost entirely the double valvular flapping, and presenting its maximum of intensity at the level of the left orifices. There the first sound of the heart was replaced by a more prolonged file one, stronger than that which corresponded with the second; a scarcely perceptible interval separated these two abnormal sounds; the file sound seemed to pass so near the ear, and on a surface so extensive, that at first it would seem to be produced by the rubbing of the opposite laminæ of the pericardium, now become unequal and rough in consequence of false membranes organized on their surfaces. But a more careful exploration—the circumstance of the maximum of sound near the left orifices and its distant propagation, with complete absence of valvular flapping—induced me to announce that there existed a transformation of the left valves into a tendinous or fibro-cartilaginous ring, and therefore from this defect a friction during the passage of the blood, &c., &c.

This lesion was doubtless the consequence of an old endocarditis, and the great and general hypertrophy of the heart was also referrible to the same cause, as well as to the pericarditis, which was probably present at the same time.

Knowing from numerous observations that of all causes of pericarditis and endocarditis the most common is the rheumatic, I asked the patient if he ever had had pains in his joints: he replied that in 1813 he had experienced them, being then a soldier, and that moreover about twenty months since he also had them. As a consequence of this, he has been subject to the palpitations under which he now suffers. M. Buchel, who had the care of him at that time, confirmed his report, and regarded the affection as rheumatic or neuralgic. He had been bled at long intervals. From the region of the heart the pain extends to the shoulder, and all the left extremity as far as the fingers was painful; he considered them the same as the rheumatic ones which he experienced in 1813.

Here then is a new lesion of the heart called organic, following a rheumatism, complicated no doubt with endocarditis alone, or combined with pericarditis. As to the affection of the lungs it was consecutive, according to the patient's account, on a neglected cold which he had contracted about nine months before. Diarrhœa came on several times during the course of the tuberculous affection; but for a week past it had diminished.

The consumptive state, cadaverous paleness, extreme oppression, total loss of strength, and abundant expectoration, gave reason to look for speedy death. The absence of anasarca and ascites, of the blue or livid face, the regularity of the pulse and its relative fulness, induced us to believe that the passage of the blood through the heart was yet free, and that during repose the heart had but little to do with the dyspnœa. Emollient potion; digitalis, gr. vi.; soup; milk.

He went out October 2d.

CASE XVI.—*October 4, 1835.*—M. Bouvier requested me to see a

patient affected with a disease of the aorta. In the presence of many students I gave the following results of the examination. He is a house painter, aged 23 years, of a light yellowish complexion. At the middle of the sternum and precordial region there is an evident arching; the hand feels a well-defined vibratory trembling, having its maximum of intensity to the right of the sternum, two or three inches below the clavicle. I immediately said that a file or saw-sound ought to be the accompaniment of this, and, accordingly, auscultation enabled us to detect this very evidently; the maximum of intensity of the sound corresponded with the same point as that of the vibratory trembling; this sound was double and masked the valvular flapping. The hand is strongly raised by the beatings of the heart over a space much larger than in the normal state, which beatings are in other respects regular.

Percussion gives a dull sound, nine inches transversely, and five and a half vertically. On the right the dulness begins towards the middle of the subclavian region, extending down towards the union of the external part of the left side with the posterior region, where the apex of the heart, soft and rounded, gives a forcible shock. An evident arching exists over the region in which there is the dull sound, and becomes less at its circumference. The beatings of the heart are perceptible as if it were exposed to view; the shock is isochronous with the pulse, so that two persons, one counting the pulse and the other the shock of the heart, pronounce at the same moment one, two, three, &c.; the dilatation of the organ can be seen the moment after the shock.

Pulse 68 to 72; there is an evident rushing, a kind of agitation of the column of blood which passes the radial artery. No rushing sound in the large arteries which come off from the aorta, although there is a very decided vibratory trembling; the respiration is easy when the patient is at rest, but oppressive when he goes up stairs or takes exercise: no dropsy.

From the above signs we could not fail to perceive a very considerable organic lesion of the heart and aorta; hypertrophy of the heart with induration of the left valves; aneurismal dilatation of the aorta, &c. We inquired what preceding diseases he had suffered, and we were convinced that articular rheumatism was the chief. This young man in the presence of numerous witnesses then told us, that "from the age of five to fifteen years, every winter he was impotent; the hands, the feet, knees, were swollen and painful."

It was in consequence of the rheumatic affections that palpitations came on, and the other symptoms of his disease. About a year since he had lead colic. This one is similar to CASE X. reported above.

This patient again came under our notice October 19, 1835. An attentive auscultation showed, in addition to what has been related, that rubbing during the systole produced a file, saw, or even a curry-comb sound, whilst the diastole gave rise to a sound like a forge bellows, very clear and perfect. Pulse regular, 68 to 72, vibratory, with

a rushing of a small volume in relation to the heart ; the rushing in the carotids, the subclavians, and in the portion of the aorta which corresponds to the hollow of the sternum, is a true, vibratory trembling, similar to that of an aneurismal tumour.

III.

Cases of Mild Articular Rheumatism without Fever.

CASE XVII.—*September 1835.*—A man with mild, apyretic, articular rheumatism ; nothing morbid discoverable in the heart. We did not think it necessary to have recourse to our plan of blood-letting, on account of the mild nature of the case, and we tried the tinct. colch. We did not meet with any encouraging result. Though mild, this case was prolonged far beyond the time at which the violent cases of rheumatism treated by repeated bleedings generally disappear.

CASE XVIII.—*August 29, 1835.*—A woman, aged 40, of a robust frame, with rheumatism of the feet and knees ; apyretic ; no indication of disease of heart. During the first twelve days she used the colchicum, and a strict diet was observed ; no amelioration.

September 9.—The two knees were more painful and swollen, especially the right ; at the internal part of which there was a distinct fluctuation ; its circumference was fifteen and a half inches ; that of the left fourteen and a half. Six bowls of blood were taken by cups on each knee, and then compresses with mercurial cerate directed ; diet.

10th.—Pains calmed ; right knee fourteen and a half inches, left fourteen in circumference.

11th.—No trace of fluctuation ; right knee fourteen inches.

13th.—The knees are completely cured ; food increased. Patient left quite well October 1st.

CASE XIX.—*October 2, 1835.*—A young man, a wine seller, after exposure to cold, has been fifteen days past labouring under rheumatism, shifting from one joint to another, and in different parts of the chest. No evident swelling of the joints ; no fever ; the heart healthy.

CASE XX.—*October 7, 1835.*—A pork butcher, aged 39 ; pains in the limbs, without swelling of joints, apyretic ; heart healthy. In 1823 he had a previous attack of eighteen months' duration ; his physician treated it by wine poultices on the joints.

CHAPTER II.

Symptoms, Progress, Intensity, Duration, and Termination of Acute Articular Rheumatism.

IT is not necessary to insist at any great length on the various points of this chapter.

I. Pain, heat, redness, tumefaction, with or without fluctuation

of the affected joints—such are the local symptoms of acute articular rheumatism. The subcutaneous veins which run over the joints are more developed than in the healthy state, and are so much the more apparent, as the skin, more stretched, is thin and shining. The pain is increased by touching and by the slightest motion, and hence that remarkable position of immobility, which the rheumatic affection when violent compels the patient to take. Fluctuation, a sign of articular effusion, can only be well discovered in the large joints and especially in the knees: where it is present there are two prominences on the sides of the rotula, which is raised, and it ceases to be in contact with the articular surfaces of the femur and tibia. This is best appreciated by a tape divided into inches and lines to measure by.

II. Violent fever, the more so, other circumstances being the same, from a greater number of joints being attacked, accompanies the above local symptoms. The pulse is strong, full, hard, vibratory, and generally 100 to 120 in a minute. Heat considerable, with abundant and somewhat clammy sweats, of a stale, acescent and nauseating odour, which bathes the whole body. After the sweats have continued some days, the skin, particularly where this fluid has been the most abundant, is covered with myriads of *sudamina*, often accompanied with a miliary eruption and red spots, something like roseola. Stoll remarked that the rheumatic fever was accompanied by a miliary eruption, white, red, or mixed.* Loss of appetite, thirst ordinarily great, sleeplessness more or less obstinate, owing to the intensity of the pains and divers complications, are symptoms which we will just mention cursorily.

The crassamentum of the blood is firm, glutinous, and is covered by a buffy coat, which is soon organized into a true false membrane, thick, dense, and resisting, and analogous to chamois leather. It floats in the midst of a clear yellow or green serum.† The edges of the buffy crassamentum were inverted, and had the form of a mushroom. Sydenham, and particularly Stoll, described the rheumatic sisy coat.‡ The urine becomes muddy a short time after its evacuation, and so thick that it has the appearance of new or sweet wine, (like the urine of mares;) it reddens litmus paper. Generally, the fever of acute articular rheumatism is of greater intensity than that of other acute affections, which we can easily conceive at the present day, since we have a knowledge of the almost constant coincidence of very intense articular inflammation with that of the centre of the circulation, to which is sometimes joined that of the vascular system itself.

* See his *Médecine Pratique*, Vol. i; April 1777.

† No observer had as yet taken notice of the buffy coat except in the blood taken by the lancet. We have also seen it very often in that taken by cups.

‡ “In the febrile rheumatism,” said the physician of Vienna, (Stoll,) “the buffy coat of the blood was always very inflammatory, and so thick that but a very small part of the red could be seen. This buffy coat was less considerable and less thick in all the other inflammatory affections, no matter how severe they were.” This remark of Stoll is perfectly correct.

III. The diffusion of articular rheumatism, or its dissemination over the blood-vessels, the heart, and other viscera, and the external and internal nerves, furnishes a crowd of phenomena upon which, for want of room, I cannot dilate. I have however explained, above, the signs of rheumatic pericarditis and endocarditis.

IV. Articular rheumatism, considered by itself and apart from various complications, shows itself with great variety, both in extent and intensity. Thus, as to extent, it sometimes attacks but a few joints, such as the foot, hand or knee: at others, on the contrary, it invades all the joints. As to intensity, it is sometimes so slight as to be dissipated in twenty-four hours; then, again, so severe as to resist whole months, unless the most energetic measures are used.

Whilst the acute rheumatism easily leaves one or more joints, it generally does so to invade others, whatever may be the mechanism which presides over this displacement. Generally, all other conditions being the same, the *fixity* and the obstinacy of acute articular rheumatism are in the inverse ratio of the number of joints attacked. The mobility of acute articular rheumatism is a phenomenon which has not as yet been sufficiently analysed. We must not think that at every degree it can be displaced, or rather dissipated easily and rapidly. Should there be, for example, a very large tumefaction of the knee, with great effusion into the joint, &c., you will soon discover whether it is most frequently by metastasis or by quick and sudden resolution that it will terminate. Two very different things have here been confounded. It is very true that, even in the cases mentioned, the pain of the joint may promptly disappear with or without pain arising in any other joint; but it is not always so with the articular effusion, which then, however, constitutes the essential element of the disease.* The pain is but a kind of neuralgia, symptomatic of the articular affection, like the stitch of the side in pleurisy; and in both cases this symptom, common as it is, constitutes nevertheless an accidental accompaniment rather than an essential character of the disease; since pleurisy can exist, as well as articular rheumatism, without pain, the latter disease being as it were but a pleurisy of the synovial membranes. To say that an articular rheumatism with effusion can always in this manner be displaced in the twinkling of an eye, would be to suppose that pericarditis with effusion could also always disappear in the same manner; an hypothesis which attentive observation will never admit.

To conclude:—An articular rheumatism which does not pass that degree, which I readily denominate simple *fluxion*, analogous to what happens in certain facial neuralgias, may present a great readiness to change its location; but it is no longer the case with one of a higher grade, with a tendency to suppuration, or which has actually termi-

* “Dolor adest atrox, nunc in hoc, nunc in illo artu, in carpis, humeris et genubus præsertim, vicissim hos relinquens et illos occupans, rubore et tumore in parte, quam postremum affecit, adhuc residuis.”—Sydenham, i. 498.

nated in a purulent or sero-purulent effusion. This last, if left to itself never disappears but within a certain period, but the pain with which it first came on may disappear long before the absorption of the pleuritic effusion. Thus then in the phlegmasiæ of membranes and of parenchymæ, the nervous element should not be considered as the fundamental, but rather the accidental accessory fact; for we repeat it, this can exist without them and *vice versâ*. We see, notwithstanding, mistakes made every day by physicians, who confound the one with the other.*

V. By the acknowledgment of every observer who has heretofore traced the history of acute articular rheumatism, the duration of this disease is very long; the medium term being from forty to fifty days.† But experience proves in the clearest manner that the duration of articular rheumatism depends on the plan of treatment; of course this medium duration is only under the conditions of a determinate treatment, and ceases under other therapeutic conditions. Supported by more than one hundred observations collected with extreme care and in the presence of a large number of students, and of many physicians, I can assert, that under the plan of treatment which I now employ, the duration of rheumatism has diminished one half, scarcely ever exceeding one or two weeks. Let it not be alleged that we have only met with mild cases: they have been as violent as those which I had formerly seen last forty or fifty days, and almost always coincided, as I formerly mentioned, with pericarditis, endocarditis, pleuritis, &c. But, again, there is no doubt in this matter—it has been demonstrated with the most mathematical precision, that the sole cause of the less duration of our cases of rheumatism depends on the plan of treatment originating with me, and of which I shall speak presently.

A very remarkable fact which had already fixed the attention of our predecessors, but of which they knew not the true cause, is the per-

* See a memoir published by me in August 1834, in the *Journal Hebdomadaire*, under the following title: "*Quelques reflexions tendant a prouver que la douleur ne doit pas être placée parmi les symptomes essentiels de l'inflammation.*"

† The duration of acute rheumatism, almost always very long, varies from fifteen days to two or three months; it has in some rare cases disappeared in three or four days, and in others lasted four to five months. Its medium duration is forty days. (*Diction. de Med. et Chir. Pratiques—Arthrite*, par M. Roche.)

M. Chomel has strongly insisted on the long duration of the disease, but he seems to have in some measure modified his opinion according to the times. In the account in the *Lancette Française*, Sept. 10, 1833, 14th 1834, and October 1, 1835, of his Clinic, I find the following:

"The duration of rheumatism may be of some minutes or of many months. Rheumatism with fever may last twenty-three days at least, and fifty days at most. The duration of general articular rheumatism, according to the returns of the cases of twenty-nine of my patients, has been only one in five days; in all the others it was prolonged from three weeks to three months."

In the essay on rheumatism by the same author, published in 1813, we read: "The duration of acute rheumatism, when mild, rarely extends beyond the second or third week, and when intense beyond the sixth."

sistence of the fever long after the joints have recovered their healthy state; this is what in the majority of cases in some measure indefinitely protracts the disease. We have been happy enough to discover the most satisfactory explanation of this rheumatic fever, which some wished to make essential. In a rheumatic inflammation of the heart, blood-vessels, pleura, &c., we behold the true cause; and we may add, parenthetically, that these inflammations are almost always completely indolent, which prevented them up to the present time from being detected. A new proof this, that pain is not inherent and essential to the inflammation; a new proof, also, that rheumatic inflammation of serous or sero-fibrous tissues is not so mobile in its nature as is so complacently repeated; since in the cases we have pointed out it is so fixed and rooted that it keeps up a fever of many weeks. It is true that in this case the phlegmasia is not seated in the joints; but a question of place is not a question of nature.

The age of our patients did not seem to modify very sensibly the duration of the rheumatism; other practitioners have thought otherwise. If confidence can be placed in a work recently published, the following is the opinion of M. Chomel on its duration as modified by age: "M. Chomel observed that from fifteen to twenty years of age, rheumatism generally terminates before the fortieth day; and that from thirty to thirty-five years, after that term, in the proportion of one to two. In those of forty-five years, the termination takes place after the fortieth day, in the proportion of four to one."

VI. The termination of acute articular rheumatism, although often of some duration, is rarely fatal. But yet endocarditis, pericarditis, pleuritis, with which it coincides, sometimes produce death. If we may judge by the cases lately published in divers journals, and particularly in the *Lancette Française*, the mortality is more considerable than we had hitherto supposed.

Another termination of rheumatism consists in its passing into a chronic form; and not only articular rheumatism but likewise the rheumatism of the heart, or of some other viscus, may and does, in truth, but too often assume the chronic form; and hence incurable organic lesions.

CHAPTER III.

Anatomical Character and Seat of Acute Articular Rheumatism.

THE pathological anatomy of acute articular rheumatism is not the most advanced portion of its history; the reason is that this disease rarely terminates in death, even when it is complicated, and, also, that among those cases in which death takes place in consequence of complications, some are met with, in which, at the moment of

death, the joints are not diseased. Let us also add that the joints have not always been examined in the rheumatic cases terminated by a violent complication.

Does acute articular rheumatism give rise to an effusion of pus or of purulent synovia in the articular cavities, just as pericarditis or pleuritis determines a collection of pus or of sero-purulent liquid or pseudo-serous membranes in the pleura and pericardium? It has been denied in these latter times, and consistently if, as it has been taught, acute articular rheumatism is not an inflammation, an opinion which would be dispelled forever, in case suppuration in the joints attacked by rheumatism were demonstrated.* What, forsooth, has been said to those who have brought forward cases of articular rheumatism terminating in suppuration? The reply is easily foreseen, to wit—that the disease was not an acute articular rheumatism.

The first who to my knowledge has pointed out the termination of rheumatism by suppuration, is Stoll, he who is invoked by some writers of the day as authority against the ideas which we are now advancing. When speaking of his third kind of rheumatism, the most violent of all, he says: "In some patients these rheumatisms after having tormented them a long time change into suppuration. These fluxions, adds he, were of a very erysipelatous caustic nature; when touched even tenderly with the finger the patient cried out."

It is a pity that Stoll did not give more extended views on this point. How and where did he discover suppuration? Was it truly in articular rheumatism that this termination took place? The continuation of the passage cited would lead us to believe so. "I have treated (Stoll speaks) two young girls, one of whom had the hand, the other the foot, affected with the same kind of rheumatism; my treatment though very multifarious and diversified could not overcome the obstinate character of the disease."

We have yet another quotation to make, which tends to prove that he spoke in fact of an articular rheumatism, and which at the same time leaves no doubt that Stoll assimilated this rheumatism under a certain form to a chronic phlegmasia. "The second kind was that obstinate and chronic rheumatism of the extremities, first with fever and a swelling of the affected part, which, after the fever was dissipated, remained a long time painful. If it was not properly managed the joints remained painful for a very long time: they were left less fit for movement, being stiff, full of nodes, swollen, and deformed.

"We have met with a dysentery similar to this rheumatism, rebellious, like it, to the known laws of treatment, and following precisely the progress of this obstinate fluxion of the joints. The intestinal

* "We have seen that pus has never yet been found in the joints, or rather when that was the case its presence was owing to other causes. Now an inflammation which probably never terminates by suppuration, has not a true inflammatory nature." (Lessons of M. Chomel in the *Lancette Française*, Sept. 4, 1834.) What is an inflammation that has not a true inflammatory nature?

pains lasted a long time. Different measures were tried ; the patients perished either from dropsy or consumption or continual dejections of serum or *chymus* ; the intestines were then found to be, especially the large ones, much thickened and indurated, but yet not ulcerated.

" Protracted rheumatism in these cases, produced in the intestines what I have said was produced in the joints by the same disease, which leaves them swollen, full of lumps, stiff, and unfit for movement."*

Let us pass on to more positive facts.

M. Chomel in his treatise on rheumatism, cites cases in which pus has been found in the joints of individuals who have died during the course of this malady, as well as other unequivocal signs of inflammation of the articular synovial membranes. He only concludes from these appearances that the symptoms which accompany this inflammation resemble much those of rheumatism. Here are the words themselves of M. Chomel :

" Can rheumatism have its seat in the synovial membranes? In a patient who died at La Charité, the two scapulo-humeral articulations had been successively affected with severe pains and swelling. In two others, observed at the Hotel Dieu, all the moveable articulations became painful and swollen with impossibility to execute any movement. After death the synovial membranes in all were found inflamed, with purulent effusions in the articular cavities. What should we deduce from these facts? that those membranes are liable to become inflamed, and that the symptoms which accompany this inflammation resemble much those of rheumatism. But what connexion is there between the two diseases? None other but the simple contiguity of affected parts."†

I have heard that M. Moreau, while *interne* at the Hotel Dieu, had found true pus, like that of a phlegmon, in the joints of a subject dead from rheumatism. M. Piorry, according to some Theses on articular rheumatism, also once or twice discovered pus in the joints. If my memory does not deceive me, I think I have collected three cases of rheumatic suppuration of the joints ; but on searching somewhat hastily in my note book I have only found the two following :

" April 11, 1828.—We opened, at La Charité, a young woman who had been affected with a very acute articular rheumatism, during the course of which a pleurisy supervened. This pleurisy manifested itself, perhaps, at the same time as the rheumatism, but this last having absorbed doubtless all the attention of the physician and attendants, the pleurisy was not recognized till the body was opened.

" She had been but fifteen days at the hospital.

" The left tibio-femoral articulation was red and somewhat dry ; the condyles of the femur were eroded ; there was no pus ; the right tibio-femoral articulation was full of true pus mixed with synovia ;

* Practical Medicine, iii, 241.

† Essay on Rheumatism, p. 14.

the congestion of blood was scarcely marked ; during her last days the patient suffered hardly any in this joint. One of the radio-carpal joints was red, like the left tibio-femoral, and had evidently been inflamed. The portion of the crural vein the nearest to the joint which was full of pus, contained purulent matter mixed with a red sanies. In all the rest of its course this vessel was obliterated by concrete blood. At several points pus was detected ; the sides of the vein were thickened, especially near the knee ; its internal membrane was of a violet red ; the fibrinous or fibrino-purulent concretion was easily detached. The crural artery was pervious—the nerve which accompanies these vessels was more red than in the healthy state, and appeared to us perceptibly thicker.”

Among the five cases of articular rheumatism, reported in our clinic from March 10 to August 30, 1832 one was mortal, of which the following is a short note.

“The patient was attacked during his stay at the hospital with a violent erysipelas of the fore-arm and left hand, with burning fever and cerebral disturbance ; he died on the fourth day.* Upon inspection of the body we found several enormous collections of pus in the teguments of the arm and hand ; and the veins of the member, as well as many others, were inflamed. Most of the joints contained a synovia clouded and thick, resembling in some parts the nature of pus.”

M. Raciborski has published the following fact :—“Villamé (Theresa), aged 27 years, a cook, exposed to moisture and atmospheric changes, pregnant five months, was attacked, January 27th, with pains in the hips followed by a chill. The knees, feet, and wrists were successively attacked. February 1.—Tumefaction, with heat and redness in almost all the joints, and dropsy of the left knee.

“Several bleedings were prescribed in successive days, but two only were practised, and these at several days’ interval. The patient remained in the same state until March 6th, when she brought forth a dead child. Metro-peritonitis came on, followed by death on the 9th. On inspection of the body, the left tibio-femoral articulation presented externally a most remarkable tumefaction. When opened, there flowed out a great quantity of pus of a well-marked nature, and there remained about two table-spoonsful ; the cartilages were soft ; and the fibro-cartilages destroyed at several spots. The capsule itself presented a deep red colour, and on its surface were false membranes. Analogous alterations were found to a greater or less degree in the two tibio-tarsal joints. The interior of the vagina contained a red serosity mingled with pus. The internal surface of the

* It is evident that articular rheumatism did not kill this man ; but it is not impossible that the phlegmonous inflammation of the limb and the phlebitis were produced by the same cause that gave rise to the articular rheumatism. At this time I employed blood-letting pretty freely, without, however, having as yet made use of the plan I now follow. The patient might perhaps have been saved if this had been put in practice. We must nevertheless allow that the cerebral disturbance constituted a most aggravating circumstance.

womb was somewhat softened, but no pus in its substance, nor was there any in its veins nor in the vena cava.”*

In the article devoted to the puerperal rheumatism of the muscles and synovial membranes, M. Cruveilhier has reported three cases terminating in suppuration. He also found the articular surfaces eroded. It is very true, and the fact is not omitted by M. Cruveilhier, that in females lately delivered rheumatic articular inflammation, like all other inflammations in general, has a tendency to suppuration, which is not observed to the same degree without the puerperal condition. But that is no reason why the nature of the disease should not be essentially the same. In order to get rid of these embarrassing facts the most simple course has been taken. It has been denied, *à posteriori*, that the existence of rheumatism, in rheumatic patients recently delivered, whose articulations contained pus, was rheumatism.

In the first case the tibio-tarsal and all the tarsal joints, and the synovial sheaths of the tendons of the common flexor muscles, the common flexor, and the posterior muscles, were filled with pus.

In the second case suppuration had taken place in the knee-joint, and in the free cellular tissue of the thigh and leg.

In the third case collections of pus were found in the joint of the wrist, in those of the instep, and in the fleshy part of the leg.†

In the last *concoure* for aggregation, one of the competitors cited the case of acute articular rheumatism in the wards of M. Husson, which terminated in death. Pus was found in most of the joints, and even in that of the process of the second vertebra with the atlas.

However few may be the cases of which we have a knowledge, they are enough to prove that the termination by suppuration, or by purulent effusion, is not wanting in acute articular rheumatism.

These facts prove at the same time that the true and chief seat of this disease is not in the ligaments, as Pinel, Chomel, and others teach. Whatever this last author may have said, the serous or synovial membranes of the joints are the real seat of the acute articular rheumatism; the ligamentous tissues are affected but accessorially, as well as many other neighbouring parts, such as the blood-vessels, the external cellular tissue, &c.

To distinguish rheumatism of the synovial tissues from that of other parts which assist in the formation of the joints, it would be well perhaps to give it the appellation of rheumatic synovitis.

Were we treating of acute muscular rheumatism, it would be easy to show cases of suppuration of the inter-muscular cellular tissue; we have histories in detail of such rheumatic abscesses. Professor Roux has observed a great many. About a year ago I sent to him a young man of a very vigorous frame who was attached to the navy, and who on account of rheumatism had an enormous suppura-

* Journal Hebdomidaire, April 12, 1834.

† Cruveilhier, Anat. Path. du corps humain, 17 liv.

tion in the cellular tissue of the left pectoral muscle, which at last destroyed him.

M. Cruveilhier in his *Pathological Anatomy*, after having said that the puerperal rheumatism, as well as the inflammatory rheumatism, proceeding from any other cause, may exclusively affect the cellular tissue which lays round each muscle like a cellular atmosphere, the muscles being altogether untouched, reports the following case: *—

"A young man while skating on the canal of Ourcq, was seized with cold, and felt a sharp pain through all the thigh: he supposed it a common rheumatic pain. Very soon, unequivocal traces of inflammation were evident; the patient's strength sank rapidly with extreme frequency of the pulse; death took place in one month. On inspection there was found in the cellular tissue of the whole thigh marks of suppuration; the muscles were as if dissected; the bone, deprived of periosteum, was in the middle of this vast denudation."

After having examined some cases of rheumatism ending in suppuration, M. Chomel concludes, that this termination is not yet established on any fact. "I do not pretend, however," says he, "that it cannot be liable to such a termination." †

M. Chomel, in his *Essay*, begins by declaring that pathological anatomy has not yet taught us any thing certain as to nervous affections, fevers, or rheumatism. He concludes from the symptoms of rheumatism that it has its seat in the muscular and fibrous tissue, but speaks with great reserve of its seat in the latter.

"The expression of articular rheumatism," says M. Chomel, "was preferable to that of fibrous rheumatism which has been substituted for it. In indicating that its seat was in a joint, it presented no false or doubtful idea, and in this sense alone I shall employ it." ‡

CHAPTER IV.

Determining Causes of Acute Articular Rheumatism.

THERE certainly is a predisposition to acute articular rheumatism as there is to many other diseases. My present object is not to insist on this point, but merely to state it incidentally.

As to the determining causes, they may be reduced, on final analysis, to one alone: viz. the impression of cold, especially when humid. Its action is the more powerful since it is displayed when the

* The puerperal state is not the cause of rheumatism. It only constitutes a predisposition to it, and favours its termination in suppuration. But as we shall soon show, the only determining cause of true acute rheumatism is a sudden chill, succeeding a more or less abundant perspiration, called by the people checked sweat.

† *Essay on Rheumatism.*

‡ *Ibid.*

body is in a profuse perspiration. Muscular fatigue also forms a condition eminently favourable to the production of this disease. The action of cold after fatigue has been well marked by Sydenham: *Hæc ut plurimum occasione rheumatismus nascitur, æger sc. sive exercitio aliquo vehementiori, sive aliquo modo excalefactus mox repentimùm frigus admisit.*

This cause is so evident that it is inconceivable how it can be doubted. A very singular fact is, that the same author who denies the influence of cold in the production of articular rheumatism, allows it as regards muscular rheumatism.*

Although I was fully convinced, on the authority of preceding observers and by facts which I had long since collected, of the influence of cold in the production of articular rheumatism, still I wished, by new observations, to ascertain what we should think of the contrary opinion. Fifty subjects of acute articular rheumatism, interrogated with this view during the present year, have for the most part formally declared to me, in the presence of students, that their disease had been occasioned (to use Sydenham's expression) by alternations of heat and cold. Some it is true said they knew not the cause; but upon questioning them it was easy to discover that all, or almost all had been exposed to the above mentioned cause. Besides, the general rule always covers the exception.

If the above were true, we should not wonder, other circumstances being the same, that rheumatism affects those in preference who, by their labour and profession, undergo alternations of heat and cold, as wine-sellers, soldiers, washer-women, &c. We can, also, understand why acute articular rheumatism is chiefly rife during the seasons of great changes of heat and cold.

A special agent, a rheumatic virus, a rheumatic humour, I well know has been created for rheumatism as well as for many other diseases. But it is a most gratuitous hypothesis, and it is painful to find such an excellent observer as Stoll entertain, in some parts of his work, this opinion. This illustrious physician, we all know, has made his gastric or saburral state, his polycholia, play an important part in the production of certain rheumatisms, and hence, even as we shall show farther on, his unfortunate division of this disease into an inflammatory variety, and into that without inflammation. However imposing may be an opinion supported by the illustrious name of Stoll, we must not, however, sacrifice observation to it; and such would be the case were we to admit all which that great practitioner of Vienna has written touching the influence of the bile on the production of rheumatism, as also of pleurisy, pneumonia, and of most acute diseases.† We must not idolize our great

* "The influence of cold is powerful in the production of muscular rheumatism; but for articular rheumatism this cause is nearly null."—*Clinique de M. Chomel, Lancette Française, October 1, 1835.*

† In various places of his Practical Medicine, Stoll very explicitly mentions the influence of alternations of heat and cold in the production of rheumatism:

predecessors. It is by following in their footsteps, and not by a servile and superstitious adoration, that we must honour superior genius.

CHAPTER V.

Of the Nature of Acute Articular Rheumatism.

I.

WHEN a certain number of cases of acute articular rheumatism have been well observed under all aspects, one cannot but be astonished at the long disputes respecting the nature of this affection. We feel, peculiarly, surprise that one of the most celebrated practitioners, after having in vain endeavoured to place rheumatism in one of the best understood nosological classes, should be obliged to place it between the phlegmasiæ and hemorrhagies.

"Rheumatism cannot be better placed," says Chomel, "than at the end of the class of phlegmasiæ, with which it has more analogy than with any other affection, and immediately before that of hemorrhagies, with which it also has intimate connexion, especially by its frequent return and mobility. It exhibits a great analogy to nervous diseases in the absence of all kind of organic lesion in the affected parts. It presents frequently inflammatory phenomena, but it is not in the parts affected with rheumatism that these phenomena take place."*

Nevertheless it must be acknowledged that good observers, in all times, have recognized the inflammatory character of acute articular rheumatism. But even whilst admitting this, as it offers phases

for example, p. 241., vol. iii, he says :—We have seen men affected with rheumatism from exposing themselves to cold when in a state of sweat. At page 218, in speaking of rheumatismal dysentery, or of intestinal rheumatism, he declares, that he never saw this disease without the patient having exposed himself to cold whilst yet sweating.

* Essay, p. 66, 67.

There are some variations in this opinion. In his published lectures, M. Chomel says :—"After having compared rheumatism with all known diseases, we are forced to recognize that it forms a group, a family as naturally as intermittent fever."—(*Lancette Française*, September 1834.) In this article an attempt is made to detail the differences between rheumatism and inflammation, which last it is said has but one form; and in those cases in which rheumatism simulates the inflammatory form, it is said to resemble variola!!! Since the fever persists after all the articulations are free, it has been concluded that articular rheumatism does not reside in the articulations; and upon this point not a single word is said about rheumatic inflammations of the pericardium, endocardium, pleura, &c., which keep up this fever and produce those curious phenomena which are never seen in inflammation!

which are not met with in other inflammations, they have found themselves obliged to assume a specific character for the disease; in consequence of which some have classed it with catarrh, others with fluxions. But as in the continual advancement of our science, these catarrhs and fluxions, allied as they are to acute articular rheumatism, have in these latter times been merged and lost in the vast class of phlegmasiæ, properly so called, it follows that rheumatism itself should be similarly disposed of.

It is not, in truth, without a feeling of professional shame that one is obliged at this time to prove the inflammatory nature of acute articular rheumatism, above all when at its maximum of intensity, since so many facts have exhibited its coincidence with pericarditis and endocarditis. Can any one, indeed, refuse the title of phlegmasia to a disease which at its height is characterized, in reference to its local symptoms, by pain, heat, swelling, and redness; and with respect to its general state, by a most violent fever; to a disease which, in those unfortunate cases that end in death, is accompanied by suppuration of the joints; which is developed under all the same atmospheric conditions with the other admitted inflammations, such as angina, bronchitis, pleuritis, pneumonia, pericarditis, &c.,* which, as we shall soon show, yields like these latter to well-timed blood-lettings, and is protracted under all other methods;† and in which, in fine, the blood abstracted offers the type of the inflammatory buffy coat!

It is very true that articular rheumatism not infrequently passes from one joint to another in a very rapid manner, returns to that which it had left, and again leaves it for another. Does this character of

* No one can now aver that the causes of acute articular rheumatism are unknown. Can it be said that great alternations of heat and cold, above all after painful muscular exercises, should have nothing to do in the development of rheumatism! To give an affirmative answer, would be to deny light and motion. But admitting that, in fact, the causes of acute articular rheumatism are entirely unknown, physicians whom we refute assimilate this affection to pneumonia, pleuritis, pericarditis; since they profess that the causes of these affections are equally unknown, notwithstanding the atmospheric changes above noted exercise on their production, as on that of acute articular rheumatism, the most marked and the most fatal influence. The etiological doctrine which we unfold respecting articular rheumatism, pneumonia, pleuritis, &c., is altogether conformable with that of Sydenham. What says this oracle of observation regarding diseases which he calls intercurrent fevers, such as pleuritis, angina, peripneumonia, &c.:—"Causa evidens *externa* (horum morborum) inde petenda est, quod quis scilicet vel prematurius vestes abjecerit; vel ab exercitio incalescens se frigori incautus exposuerit; et sane existimo plures modo jam designato, quam *peste*, *gladio*, atque *fame* simul omnibus, *perire*."

† A proposition, to those whom we combat, harsh and heretical. These persons teach that blood-lettings do not arrest acute articular rheumatism in its progress, do not sensibly abridge its duration; in a word, do not cure it. I agree very willingly that blood-lettings, practised after a certain fashion, are as powerless as they declare; but what I affirm is, upon the most conclusive experience, that reiterated blood-lettings, as we employ them, cure acute articular rheumatism, pleurisy, &c. I call to witness on these points the conscientious depositions of many observers to our plan of treatment!

mobility, or of ambulation of articular rheumatism, justly pointed out by all observers, constitute an irreconcilable contradiction with its inflammatory nature which we have recognized? If so, we must also erase from the list of phlegmasiæ certain erysipelas, anginas, catarrhs—diseases which in a mild form may disappear in the space of twenty-four hours, and even less.

There are, besides, peculiar conditions to be noticed for the sudden displacement and disappearance of articular rheumatism; the principal of which are the following: 1. The mildness of the disease and its diffusion over many joints at its onset; circumstances which are to a certain point correlative: for it seems to lose in strength what it gains in extent. 2. The influence of the external cause which produced the primitive disease, acting on a part till then intact; and in this case it is not, as has been said, the rheumatism of the diseased joint which is transferred to the healthy one—but this last being strongly attacked the other becomes more or less easy, conformably with the great law of Hippocrates, *duobus doloribus simul obortis, non in eodem loco, vehementior obscurat alterum*. 3. In fine, the general rheumatic diathesis, which a general chill, succeeded by heat and more or less abundant sweats must necessarily produce, notwithstanding that this cause determined at first an inflammatory fluxion only on some of the joints.

I make use designedly of the expression inflammatory fluxion, in order to approximate the shade or the degree of the rheumatism which we are at present studying, to those fluxions of the face which sometimes accompany the toothache or caries of the teeth. Will it be said that these last are not inflammatory, because they cease rapidly so soon as the violent pain which constitutes the predominant symptom has disappeared? To show this negation in its true light, it is sufficient to remark, that in the cases in which this fluxion is carried to a very high degree it terminates in a true abscess. Let us beware, we cannot too often repeat, not to assume differences in the intensity of one and the same malady, for differences in its nature and essence.

I have said above, that a knowledge of the great fact of the coincidence of pericarditis and endocarditis with acute articular rheumatism, is an argument in favour of its inflammatory nature. What in fact is pericarditis and endocarditis if not a true rheumatism of the sero-fibrous tissue of the heart?—and, on the other hand, what is acute articular rheumatism if not an inflammation, and as it were, an endocarditis or a pericarditis of the sero-fibrous tissue of the articulations?

We hear it urged, again and again, that we are acquainted with inflammation of the joints from an external cause, or *traumatic*, or *surgical arthritis*; and that as the latter is not like acute articular rheumatism, therefore this last is not an arthritis. In truth such objections do not merit the honor of refutation.

It may be alleged that we are acquainted with traumatic or surgical arthritis, and that its phenomena are unlike rheumatism. It would have availed more, it seems to me, to have said that we are acquainted with

non-traumatic or *medical* arthritis, and that it bears no resemblance to the affection called acute articular rheumatism. We affirm that acute articular rheumatism bears such an analogy to medical arthritis, or that produced by a cause not traumatic, that it is impossible to adduce a single example of the latter without confounding it with the former. Now, of all the serous membranes is it possible that the synovial should be the only ones which never suffer a medical inflammation, or that arising from an internal cause?

Because pleurisy, pneumonia, pericarditis, which are developed under the influence of the same causes as acute articular rheumatism, do not conform precisely with traumatic pericarditis, pleuritis, or pneumonia, shall we therefore conclude that the first are not inflammatory. Undoubtedly the kind of cause which produces a phlegmasia, impresses upon it a peculiar stamp, a form, a progress, which do not belong to other phlegmasiæ determined by different causes; and these peculiarities should be strictly considered; but that does not prevent its nature from being essentially the same, nor the inflammatory type from being evident in every case, to truly observing minds. Is it to be expected, for example, that an individual suddenly attacked, after an alternation of heat and cold, with an acute articular rheumatism spread over a great many different parts, should experience precisely the same symptoms as another affected by an inflammation of only one joint, produced by a blow, a fall, or some cause termed local? Certainly it is impossible for any physician with common medical knowledge to maintain such a doctrine. Every cause which attacks at the same time several parts of the animal economy, and becomes evident and general, may, at the same time that it excites true inflammation in some points, only produce in others simple excitement, and call into action this *general diathesis*, which, without being a well characterized inflammation, is not the less a state which really has a tendency to pass on to inflammation, or, as it were, an inflammation in the formative or rudimentary state. The circulatory system is certainly the ordinary seat of this general inflammatory diathesis, which, as I think I have elsewhere proved, is blended with the febrile state. It appears that the new facts, which I have collected on acute articular rheumatism, serve expressly to support the doctrine here laid down. In what case can we find a fever called inflammatory, a synocha, more violent or better characterized than that in acute articular rheumatism—a fever which continues often to a high degree after the cessation of the articular inflammations? Now is it not well worthy of attention, that endocarditis, phlebitis, and sometimes arteritis, are met with in patients labouring under acute articular rheumatism?

However this may be, it is clear that the numerous inflammations of joints produced by a *rheumatic* cause, should be less deep seated than traumatic inflammation of one of these joints; that they consequently should be less adherent to the affected parts, should be displaced more easily, be reproduced under the renewed influence of the cause, as

the traumatic arthritis would be reproduced likewise if a fresh cause should act with sufficient force. But there is this difference, that, in the latter case, there does not exist the general inflammatory diathesis which favors the development of a local inflammation in the points upon which any *irritating* cause whatever can act. Let us add, that these traumatic arthritic affections do not coincide, as the violent rheumatic ones do, with pericarditis and acute endocarditis, and that a knowledge of this last circumstance really gives us the key to many phenomena which till now have singularly embarrassed observers. So that, this rheumatic or arthritic fever being present, whilst the rheumatism itself is absent, upon which some based their theory of the non-inflammatory essence of the disease, is precisely one of the most decisive proofs in favor of the contrary theory. In fact, the cause which keeps up this fever is ordinarily an inflammation of the pericardium or endocardium, an inflammation which, I repeat it, is but a rheumatism of these sero-fibrous tissues.

Thus then the peculiarities which acute articular rheumatism presents in its course, do not prevent us from classing it in the rank of phlegmasiæ. My learned colleague and friend, M. Roche, has well exhibited this point, in his excellent article *Arthritis* of the *Dictionnaire de Medecine et de Chirurgie Pratiques*. But let us see how he distinguishes between traumatic and rheumatic arthritis. "Onè cannot doubt," says he, "that traumatic arthritis consists in an inflammation, pure and simple, of the serous and fibrous tissues which go to form the joint; and it is conceivable that this inflammation should remain local, like its cause; that it should be fixed, continued, regular, and not subject to relapse. It appears certain to us that in rheumatism, besides the inflammation of the joints, there exists an alteration of the blood, which, in part even controls the other morbid state."

What then is this alteration of the blood superadded to the articular inflammation, which in a degree controls this latter, and which specially characterises articular rheumatism? It is to be regretted that M. Roche has not more amply explained the matter. If at the time in which he wrote his essay, rheumatic pericarditis and endocarditis had been known as they are at this day, would he have placed solely in an alteration of the blood, which he does not specify, the pathognomonic character of acute articular rheumatism?

It is not that I deny an alteration of the blood in acute articular rheumatism. I have made on my part numerous researches, which show on the contrary that there is no other affection clearly inflammatory, not even pneumonia, in which can be seen a more perfect buffy coat, a more firm, more resisting, and more glutinous crassamentum. But we must, nevertheless, bear in mind that this is not the character which distinguishes acute articular rheumatism from other well marked acute phlegmasiæ with high febrile reaction; since on the contrary it is common to all. It has appeared to me that if the crassamentum be so firm and so glutinous, the inflammatory buffy coat so thick, so dense, resisting and so well organized into false membrane,

it is on account of the rheumatic fever being, above all, an inflammatory one; that this inflammatory fever is, in part at least, the result of a true phlegmasia of the internal membrane of the vascular system in general, and of the endocardium in particular, which gives rise to a secretion of false membrane and to the formation of the buffy coat.*

Till now, practitioners have been content with showing the buffy coat in the blood, after venesection. As I have before stated, I have also found it in the clots furnished by bleeding with cups around the joints.† There is at the present time under treatment, a pale, bloodless and cachectic individual, five or six years of age, who for about a fortnight past has been troubled with a subacute rheumatism of many of the joints of the inferior extremities, and more particularly of the right knee. As there is scarcely any febrile reaction and the heart is not affected, I have, on account of the impoverished condition of his blood, omitted to have recourse to general bleeding; but cups have been applied on the affected joint two days in succession; and what is worthy of remark, notwithstanding this impoverished condition of the blood, firm, glutinous masses were procured, covered with a grey resisting buffy coat.

If all which we have now advanced be not sufficient to demonstrate clearly, I had almost said mathematically, the inflammatory nature of acute articular rheumatism, I would adduce another argument of no little moment, viz:—Did acute articular rheumatism truly constitute an inflammation, it ought, when it fixes itself on a joint for several months and at last passes to the chronic stage, to produce the same disorder in that joint which an undoubted inflammation would have done. This is what actually does occur. Dissect the joints attacked by a rheumatic white swelling, and you will find really that the alterations noticeable in it are similar to those which characterise a white swelling from a traumatic cause, and which denotes the existence of an anterior inflammatory condition. I have had sufficiently frequent opportunities to assure myself of the truth of what I have just advanced.

We shall now compare the alterations caused by chronic rheumatic pericarditis and endocarditis, with those which chronic rheumatic arthritis brings in its train. Excepting the differences arising from the different organization of the heart and articulations, those alterations are essentially the same. In both cases adhesions, solutions of continuity, thickenings purely hyperthropic, or with transformation of tissues, are observed.

* Inflammation of the internal membrane of the sanguiferous system may, by another mechanism of which I am ignorant, dispose the blood to the formation of the buffy coat, and we will give the name, if there are no objections, of *hæmitis* to this alteration of the blood. Certain it is, that the alteration is the product of a violent febrile action without complication of a typhoid or putrid state, and that this febrile action has its real seat in the vascular system, and in the blood circulating in it.

† I have noted the same peculiarity in other phlegmasiæ, and especially in erysipelas and pleurisy.

Acute articular rheumatism may, as we have seen, according to its degrees of intensity, at one time assume the purely fluxionary form, and at another the suppurative one. Now, under this new point of view, it again allies itself to a great number of other diseases whose inflammatory nature no physician denies. Take ophthalmia and coryza as examples. In the first degree, the first shade, the first notice of the phlegmasia, we have serous flux with redness and moderate sanguine congestion; in a greater degree, ophthalmia and coryza with puriform secretion. Behold stomatitis—first degree, copious flux of saliva, and of serous mucus with salivation; in a greater degree, secretion of false membranes, aphthæ, &c.

If we study bronchial catarrh, and compare the expectoration of the first with that of a higher degree, we shall find the same difference. In intestinal catarrh, known under the name of dysentery or bloody flux, the first degree exhibits serous diarrhœa; and at a more advanced stage, glairy secretion, bloody, puriform, and even sometimes shreds of false membrane, tendency to ulceration, &c.

Blenorrhagia shows, in the first stage, serous, and later one, purulent flux. Could we, if possible, have resemblances still more natural? We have but to note the inflammation of the arachnoid membrane, which, like the synovial, is spread out on a fibrous tissue. A milder degree gives cerebral fever, hydrocephalus acutus, serous effusion; a more intense one is marked by purulent effusion, false membranes, &c.

If we look at the phlegmonous and parenchymatous inflammations themselves, we shall discover similar peculiarities. Should we open, for example, a phlegmon in the crude state, we find the cellular tissue infiltrated with serosity of but little consistence, or with gelatinous lymph; but in a more matured state we discover pus.

Thus we see, beyond dispute, what no observer can deny, that one and the same disease may assume a great variety of forms without losing thereby its essential or peculiar nature. So true is it that the secreted products are modified according to the degree of phlogosis, irritation, or inflammation, that the different phlegmasiæ of which we have just spoken, when they terminate by gradual resolution, end in some measure as they had begun; that is to say, a simple serous flux succeeds suppuration, which itself had been preceded by serous flux or simple extra secretion (hypercrinia of M. Andral). It is known, in fine, that the phlegmasiæ may be prolonged indefinitely under this form, which constitutes the catarrh and serous fluxes of the older writers.

Why should not the metamorphoses through which the above mentioned different phlegmasiæ successively pass, be remarked in articular rheumatism? and if these metamorphoses do not prevent the first from being of an inflammatory nature, why should not the same rule be applied to the last? Moreover, if the fluxionary hypercrinic form of rheumatism be susceptible of a rapid disappearance, such is likewise the case with the majority of the other phlegmasiæ. We must always remember that on account of differ-

ences of organization, other things being the same, the mobility is not alike in them all, whatever be their seat.

Let us then frankly acknowledge that, under whatever point of view we attentively study the disease called acute articular rheumatism, it belongs by its very nature to the grand class of phlegmasiæ. It even constitutes one of the most important species, on account of the extent of the tissues, which it especially affects, tissues which are not peculiar to the joints alone, but which are met with, on the contrary, in other external and internal parts. Hence the coincidence of internal inflammations with those of the joints, the knowledge of which has cast a new and unexpected light over the phenomena of acute articular rheumatism.

II.

Let us now see whether the opinion which we advance is conformable with that of two physicians, whose labours have given most celebrity to the seventeenth and eighteenth century ; I mean Sydenham and Stoll.

As to the first of these two great observers, he does not hesitate to recognize in rheumatism an inflammatory character, and, in consequence, recommends us to treat it with free bloodlettings. Here follows his creed on this point. After describing two kinds of rheumatism, to wit, the acute articular rheumatism, properly so called, and rheumatic lumbago, he says :—*Cum utraque hæc morbi species ab inflammatione videatur oriri, quod tum jam dicta arguunt phænomena, tum præsertim sanguinis venæsectione educti color, ut pote qui pleuriticorum sanguini tam est similis, quam ovum ovo, neque quisquam reperiat, qui hos inflammatione laborare vel quidem dubitaverit ; his, inquam, ita se habentibus, censeo ego, curationem non aliunde quam a phlebotomia debere sumi.*—(De Rheumatismo.)

The theory of Stoll, less simple than that of Sydenham, does not seem at first sight to support as fully the one which we have advanced. The illustrious German does not hesitate to declare a certain kind of rheumatism to be inflammatory ; but there is another from which he appears to withhold the *processus inflammatoria*. Let us enter into some details on this head. However much we may all profess great admiration for the observing mind of Stoll in general, it is not less true that his view of the different kinds of one and the same disease is faulty in many respects, and is often in opposition to the best authenticated facts—nor is it irrelevant to note, that in his theoretical view he is sometimes in contradiction with himself.

When we read and attentively meditate on the numerous passages in which Stoll treats of rheumatism, and when we consider the spirit rather than the letter of his writings, we cannot fail to be convinced that the differences which he admits in rheumatism, depend more on the causes and seat than on the nature itself of the affection. Thus the rheumatism which he calls bilious, gastric, or saburral, does

not differ from that which he calls inflammatory, in respect to the symptoms and to what is perceptible in the diseased parts ; but in an etiological point of view, the first alone being of gastric or bilious origin, that is to say, "produced by an acrid and bilious matter absorbed chiefly from the stomach and carried to the periphery of the body, where it seizes on the orifices of the exhalent vessels and irritates them." We perceive by the language of Stoll himself, that bilious rheumatism was truly, according to him, an irritation, but an irritation which instead of being produced by a sudden chill, was caused by the transfer to the parts affected, of a gastric impurity, of an acrid irritating bile, &c.

Hence, all that we have to consider in this place is a question of etiology, and provided we grant to Stoll what he has said of his favourite polycholia in the development of acute articular rheumatism, rheumatic fever, he would not on his part deny that the articular affection constitutes an inflammation. He would the more willingly have made this concession, since he positively says, in speaking of the gastric rheumatisms of March 1777, that the blood was inflammatory, and that such was also the character of the diseases then prevalent, which at first had made him believe the rheumatisms to be inflammatory.

Stoll does not separate articular from muscular rheumatism, so called ; he takes especially great care not to say that cold produces one but not the other. And how, indeed, could he possibly have committed this last error ; he who cites cases in which, under the influence of cold, he has himself seen the two kinds of rheumatism spoken of supervene at the same time in the same person ?

Thus reduced to its true meaning, the question of the different nature of rheumatism well deserves a serious and mature examination, in a spirit free from all systematic prepossession and scholastic prejudices. Whilst fully admitting that in bilious or gastric rheumatism, the local disease is truly inflammatory, it is evident that conformably with this principle, to destroy the effect the cause must be attacked (*sublatâ causâ tollitur effectus*), in this species of rheumatism, and that the first indication presented would be to vomit, and it is known how far Stoll was true to this principle. It remains then for us to ascertain whether rheumatism sometimes proceeds from the bile or stomach, as Stoll has taught us ; or whether, on the contrary, in those cases even where the bilious temperament exists in persons affected with rheumatism, it be not a complication, a coincidence, rather than a cause of the disease. Nothing would seem easier at first sight, than to elucidate the problem now under consideration. Vomit the patient ; it will be said, if it cures him you have certainly treated a bilious rheumatism ; if on the contrary it does not cure him, you have not treated a rheumatism of bilious origin. Such was precisely the method pursued by Stoll, and he often declares that he could only resolve the problem in this manner. So much in criticism of the logic of Stoll. After all, whenever evacuants cure rheumatism, can it be rigorously concluded that acrid bile absorbed from the stomach had produced it ? Can it be that by opposing this

hypothetical absorption evacuations are of service? Is it clearly proved that the cure obtained after evacuation, was the effect (*post hoc ergo propter hoc*) ; or that the same rheumatism which Stoll cured by emetics, has by other practitioners been cured without recourse to them? Are there not then other inflammations, such as pleurisy and pneumonia, which have been, it is believed, cured by emetics; although assuredly they were not developed by the mechanism laid down by Stoll—the absorption of an acrid matter from the stomach, &c. &c.

But we have already said too much on this subject. Let it suffice to know, that even though we should adopt the ideas of Stoll on the gastric origin of rheumatism, it by no means follows, from the acknowledgment of this illustrious practitioner himself, that acute articular rheumatism does not constitute an inflammation. Because an inflammation caused by a thorn demands, as the first therapeutical step, the extraction of the foreign body, the acrid matter as it may be called, which has produced it, ought we to infer this inflammation is not an inflammation? Let us grant that it may be necessary in order to cure the acute articular rheumatism, called bilious, to extract the acrid matter of the stomach, to pluck out as it were the bilious thorn, the foreign saburral body; yet, still waiving the nature of the cause, as this rheumatism resembles that which is called inflammatory, it is impossible, agreeably to sound logic, and, still more, to accurate observation, to deny its being of the same nature. Again, this author so faintly denies the inflammatory nature of rheumatism, that he gives to this morbid condition the name of rheumatic inflammation. It is very true he adds, that rheumatic inflammation does not appear to him to be the same as that which is called true inflammation. But unfortunately, as I have formerly remarked, we shall in vain seek in this author for what he calls true inflammation. Yet more—in the whole course of his work he has not really given a single example of this true inflammation. Take away indeed the inflammatory affections he has described: rheumatic, bilious and septic inflammations, and what remains? Nothing, positively nothing. But I am in error. In his excellent dissertation on dysentery, Stoll indeed speaks of *true* dysentery. Would we know, however, what is this true dysentery? Precisely that which he designates under the name of *intestinal rheumatism, catarrh of the intestines, ventral coryza*; and yet Stoll farther on distinguishes inflammatory from rheumatic dysentery. What, forsooth, does he here mean by inflammatory dysentery? Rheumatism of the intestines complicated with an inflammatory fever. He adds that he has no conception of dysentery without rheumatism of the intestines.

If the reader will look over the resemblance indicated by Stoll, between rheumatic inflammation and the inflammation called true, he will see that if one be not like the other it is because he has taken, we make bold to say has actually mistaken sometimes, simple neuralgias for inflammations of serous membranes; pleurodynia, for example, for pleuritis. Nor has he sufficiently taken into account

the differences caused by complication, extension, dispersion or concentration of the inflammation. It will likewise be seen that certain differences which he there establishes are in contradiction with others in his work. For example, he says in this comparison that rheumatic inflammation does not observe the laws of coction nor those of crises; and in treating of rheumatic pleurisies he says that they formed crises by sweat.

Who also could believe that so acute an observer as Stoll, could assert that *true* inflammation ordinarily terminates in a few days, whatever may be the result; whilst rheumatism was often prolonged for weeks and rarely terminated in a short time, when abandoned to nature! As if inflammations, indisputably true ones, with considerable suppurations were terminated in a few days! As if the cause of the prolongation of rheumatic fever did not reside in some kind of inflammation! No; Stoll never would have thus expressed himself had he known in what condition were found the pleura, pericardium, endocardium, &c., in those affected with obstinate, never-ending rheumatic fever, so misunderstood in our own time even by certain *classical* physicians.

To conclude. All the distinctions of Stoll concerning inflammation, when they are well studied, and considered, and divested of all subtlety and all hypothesis, are reduced to this, which no one can deny; viz. that inflammation presents differences according to its degree, its cause, and its seat. But as to inflammation studied in itself, it cannot be supposed to offer various natures, seeing that of two morbid states essentially different, which would be classed under the name of inflammation, there would necessarily be one which was not an inflammation. Certainly a thing, whatever it may be, cannot change its nature without losing its identity.

CHAPTER VI.

Treatment of Acute Articular Rheumatism by repeated Blood-lettings.—Results of this Practice.

To propose a specific, such as colchicum, or something else, for acute articular rheumatism, would not be a proof of correct notions of the nature of the disease. We might as well propose a specific for pneumonia, one for pleuritis, another for pericarditis, &c.

The true specific for acute articular rheumatism, its quinine, if the phrase be allowed, is the antiphlogistic method, and the grand antiphlogistic is blood-letting. Since the time of Sydenham, this method has been generally adopted.

I do not pretend that we cannot cure acute articular rheumatism in any other way than by blood-letting. That would be to say that

nature alone does not sometimes cure this disease as well as others. What I affirm is that, in mild cases, we have tried several other methods besides blood-letting without success, and that blood-letting itself is not fully effective unless after the method we shall soon lay down.

But it is not sufficient to know that it is useful to bleed in a disease. We must determine, in a given case, what quantity ought to be drawn; in how many times it is advantageous to take it; what interval between the bleedings; when they should be repeated; whether the blood should be taken generally, or locally, or both at the same time, and in what proportion. This is what I would designate, if allowable, *to indicate the dose, to make formulæ of blood-lettings.*

It is by modifying the methods formerly employed, that we have obtained very different results from those previously made known, either in the treatment of acute inflammation in general, or of acute articular rheumatism in particular; that disease so rebellious, it is said, to blood-lettings.

Before making known the method of cure which we propose for this last affection, we feel called upon to indicate that of Sydenham, and that of Dr. Roche, in his Article on Rheumatism of the Joints, in the *Dictionnaire de Medecine et de Chirurgie Pratiques*. The method employed by the majority of modern practitioners does not differ from that of Dr. Roche, except that the blood-lettings are generally more moderate.

I.

This is the method adopted by Sydenham:—"Ut primum accersor, statim sanguinis ζ x. è brachio *lateris affecti** mitti jubeo.

"Die sequenti, sanguinis tantumdem detrahi præcipio; atque intercalato die uno alterove, pro ægri viribus, tertio; dein, interjecto trium quatuorve, dierum intervallo (prout ægri vires, ætas, constitutio, aliæque circumstantiæ suadent monentque), quarto atque ultimo ut plurimum, venæsectionem repeto; raro enim usu venit, ut ultra quartam vicem venam incidamus, nisi vel regimen justo calidius præcesserit, vel medicamina calidiora ægro præter necessitatem fuerint ingesta."

These means were assisted by the use of simple juleps or of an emulsion, and by poultices, cooling drinks, injections, and regimen. Sydenham forbade anodynes or paretics; and eight days after the last bleeding he gave a mild cathartic potion.

He does not say positively what was the duration of the disease under his treatment; but it is easy to see that it was long, since he only prescribed the cathartic potion about the twelfth or

* The precaution which Sydenham here takes of bleeding from the affected side, is based on old and I may add antiquated ideas. Unless indeed bleeding in both arms were practised at the same time, it would be difficult to obey the precept of Sydenham, since a violent rheumatism of the joints almost always occupies both sides of the body at one time, though often in different degrees.

fifteenth day after the commencement of the treatment; and to show that convalescence was incomplete after its administration. he remarks, that the pains were much assuaged by the bleedings, without however being entirely dissipated.

We can judge of the value of the method of Sydenham, and of its influence on the duration of acute articular rheumatism, by the results which the majority of physicians of our times obtain from the employment of the ordinary method of blood-letting in the treatment of this malady. We see, then, that the most distinguished among them profess that, if the disease does not entirely baffle the method spoken of, it is at least certain that it does not notably abridge its duration, the medium of which is, they say, generally from forty to fifty days. This assertion rests on the most imposing mass of facts, and I shall not deny it.

The following is the result of the Sydenham practice in those cases in which Stoll pursued it. "I sometimes followed," says Stoll, "the practice of Sydenham, but the length of the disease often eluded this active treatment, and frequently the strength was destroyed sooner than the disease; the patients remaining weeks without being able to stir. Sometimes, after the example of other practitioners, I gave, in large potions, various diaphoretics, and I endeavoured, afterwards, by a warm regimen, to eliminate the morbid matter through the vessels situated on the superficies of the body; but, most commonly, the disease resisted all my efforts."

If we were to take literally an assertion of the celebrated successor of Dehaen, Sydenham had abandoned his method of blood-letting in the treatment of rheumatism. Let us go to the source, and see whether the English Hippocrates was culpable of this sort of therapeutic apostasy. It is not in a didactic treatise on rheumatism, but in a simple letter to Robert Brady, his friend, that we must seek for this pretended change of Sydenham. He writes that, grieved at being obliged to abstract so large an amount of blood in order to cure rheumatism, he resolved to try if he could not combat this malady by another method; and adds, that in fact he had found in a simple regimen, very light and moderately nutritive, such as whey, the precious secret of curing rheumatism without making use of repeated blood-letting. But in support of this new method, he reports only one case, that of an apothecary (*vir probus*, says he, *et ingenio non vulgari*), in which it was used with some success. Now we ought to know whether the rheumatism of this apothecary was anything less than an acute articular rheumatism; and if, like many other very worthy men of a mind above the ordinary standard, this person was not of a very dry and debilitated frame, and had but little blood in his veins:—*Cum debiliori esset et sicco corporis habitu, veritus ne minus firmas jamdiu vires et labescentes, dempto copiosius sanguini prorsus exsolverem, imperavi, ut solo LACTIS SERO ad dies quatuor vesceretur æger, &c.*

There is no one, I think, who would not approve of the conduct of Sydenham in a like case; but to conclude from this fact that we can cure acute articular rheumatism without any other treatment than

drenching the patient with whey, would be to fall into an egregious error. I have nevertheless thought, with the illustrious English practitioner, that this method was preferable even to the ready and solemn display of medical means with which, says he, the dying are surrounded, just as the beasts are crowned before they are immolated.

After having added that, were it not for the prejudice of the vulgar, this method could be applied to other diseases whose names he did not wish, at that time, to mention, and citing the example of success which a skilful physician might derive from means the poorest in appearance, Sydenham returns to the subject of rheumatism, and, at the same time, to its treatment by blood-letting, in professing that it would not be prudent to rely on the milk diet in those who have attained the age of manhood, or in those who have been addicted for some time past to wine or other spirituous liquors. He only proposes an amendment to his old method. It would be better, says he, after the second or third bleeding at most, to employ more frequently, and to repeat the cathartics until all the symptoms had entirely ceased, than to confide in phlebotomy for the entire treatment.

Most assuredly, every one will agree with Sydenham, that it is a melancholy thing to be obliged to take away a large amount of blood in the cure of rheumatism. But it is a sacrifice which prudence commands; and we make bold to affirm that they will be compelled to give for a long time whey, tamarinds, senna, rhubarb, and manna, who make use of two or three blood-lettings of ten ounces at most, in the treatment of acute articular rheumatism in a young man or an adult of common strength.

Among such as shall be thus treated, it will be found that a rheumatic inflammation of the pericardium, endocardium, pleura, &c. will carry some off; and others, who may be either more, or, shall I say, less fortunate, will sink at a later date under an organic disease of the heart. With a knowledge of such dangers, proved as they are by daily experience, is it really so great a sacrifice to lose some pounds of blood for the almost certainty of a cure at once prompt, permanent, and complete? Undoubtedly, if time, and experience, the mother of all discoveries, teaches us a method as sure and less prodigal of blood, we ought to hasten to adopt it as a great benefit. But either I am much deceived, or the time is yet far distant when we shall know how to cure surely, permanently, and completely (I will omit promptly), this terrible acute articular rheumatism, which is almost always accompanied with pericarditis or endocarditis, not to mention other complications.

II.

The Method of Doctor Roche.

Dr. Roche, our learned friend, has justly constituted himself the defender of general bleeding in the treatment of arthritic rheumatism. "If some practitioners have contested the benefits from this treat-

ment, it is," says he, "because they have not employed it with sufficient constancy or energy."

The method which this skilful physician proposes: "We must not hesitate to practise a copious bleeding at the commencement of acute articular rheumatism, nor fear to repeat it three, four, or five times in succession, if it be necessary, either in allowing an interval of two days between each bleeding, as Sydenham did, or in practising it every twenty-four hours, which appears to us to be preferable. I have used with the greatest success, in a very robust individual, as much as eight bleedings of sixteen to twenty ounces in the space of two weeks."

There is not a word respecting the local abstraction of blood in the plan of treatment of Dr. Roche, any more than in that of Sydenham. Assuredly, were we obliged to choose between the exclusive employment of general emissions of blood and that of local ones, we should not hesitate one instant to decide in favor of the former. But as such a choice is not forced on us, it is best that we should, at least in the great majority of cases, combine in proper proportions these two methods of abstraction of blood, as we shall do in the plan which it remains for us now to exhibit.

III.

Method by repeated Blood-lettings, General and Local.—Its Results.

I. Often a witness to the interminable duration of acute articular rheumatism, I resolved to attack it by employing blood-lettings in a manner different from what had as yet been done. Well convinced that acute articular rheumatism was at the head of inflammations of the most evident and legitimate character, I had recourse to the method of copious blood-lettings practised in quick succession (*coup sur coup*), in the same way as I employ them in pneumonia, pleuritis, pericarditis, severe erysipelas—in a word, in all febrile inflammations which endanger more or less the life of the patients. I had recourse to this method even before I had well detected pericarditis and endocarditis as the ordinary accompaniments of acute articular rheumatism.

The success attending this new method of abstracting blood, is such that it is impossible to believe it without ocular demonstration. Of course I am not in the least surprised at the philosophical doubts of some individuals; but what does appear singular to me and rather unphilosophical, is formally to deny results without testing them by their own experience or that of others. What I fear not to assert is, that all those persons (and they are numerous) who have been witnesses to the employment of this method, have been obliged to acknowledge its immense superiority over all others. We have even had witnesses deeply prejudiced against it, and perhaps even still more prejudiced against us, and yet they have finally done justice to it. By the new method the medium duration of rheumatism is only one or two weeks instead of six or eight. As to the mortality up to this period, there has been no death, even in those cases in which the rheu-

matism of the joints was accompanied by that of the heart, and our observations prove, as already said, that those cases are the rule, whilst the contrary ones are the exception. But we are not to believe that such is, also, the case in the practice of others. To be convinced of the contrary, if we walk the hospitals and read the journals of medicine, we shall there come across cases of articular rheumatism complicated with pericarditis, endocarditis and pleuritis, which are mortal. I have reported a certain number of cases of this kind in the *Clinical Treatise on Diseases of the Heart*.

Another advantage of the new method is to prevent the passage of the disease into the chronic state, a serious termination, even when confined to the joints, but often mortal at a period more or less advanced, when in the heart. Our observations prove but too truly how common is this last event, since one half perhaps of lesions of the heart called organic are owing to an old rheumatic affection, or are, if we may use the expression, of a rheumatic descent.

II. Supposing the patient of good constitution and in the prime of life, on the day of his entrance into the hospital, at the evening visit I order a bleeding of four bowls; sometimes in very robust individuals five and even six bowls.*

Second day.—Venesection, three and a half to four bowls, and in the interval of these two bleedings a local one, either by leeches or scarified cups, which last I prefer. By this local abstraction of blood I obtain three, four, and even five bowls more. The cups are placed around the joints most affected and over the precordial region, when the heart is affected, that is to say, in the great majority of cases.

Third day.—The same as on the second day.

Fourth day.—The fever, pains, swelling, in a word all the inflammatory phenomena, sometimes disappear at this time—then we abstain from further abstraction of blood. If the above result is not obtained, a fresh bleeding from the arm is practised.

Fifth day.—In general, resolution has commenced by this time—however in very severe cases the fever called rheumatic may still in some degree remain, and then we practise another bleeding from the arm of three bowls, or draw the same quantity by cups or leeches.

On the sixth, seventh, or eighth day, the patient is decidedly convalescent, and begins to take nourishment. Should a serious relapse take place (and this new method, though it does not give perfect preservation, promises infinitely more than the old one) we must again resort to bleeding. Thus, in a case where four bleedings had arrested a severe acute articular rheumatism there was a violent relapse, which we only mastered by five more bleedings. If the relapse be mild, we may trust to emollients, diet, baths, opiates, &c. To avoid it the most important precautionary measure is protection from the least exposure to cold. The adjuvants to these repeated bleedings are

* See CASE III. of the first head.

diet, demulcent drinks, blisters, compresses, sometimes smeared over with mercurial cerate, around the joints affected; and position, poultices, baths, and opiates; the last either internally or applied according to the endermic method. Some physicians use opium in very large doses, but we prefer the ordinary ones.

The medium quantity of blood which we draw, in individuals of a good frame of body with intense acute articular rheumatism, is from four to five pounds, being the same as in pneumonia of medium extent and intensity. In certain cases, where the attack is very severe, we are obliged to take six, seven, and even eight pounds. In mild cases, on the contrary, two or three pounds only are taken; but we must not forget that in these cases, which we call mild, there is, notwithstanding, fever; for in rheumatism without fever, a single bleeding often suffices, and this sometimes may be dispensed with altogether. Even in extreme cases we have never been forced to draw twelve pounds, as others assure us they have, without, however, then arresting, so they tell us, the course of the disease. It is making a sport of misfortune, if a rheumatism thus treated should seem to terminate only the twenty-fifth day; and then to return in a few days. This misfortune has happened to M. Chomel, as he himself told me, and the fact has been moreover published in the *Lancette Française*, October 1835, from which we extract the following: "The practice of abstractions of blood has often been followed by ease; but although it has been carried far, we have never been able to arrest the rheumatism. I would recal, among others, the case of a patient from whom twelve pounds were taken; the disease seemed to terminate on the twenty-fifth day, but it returned in a few days and lasted two weeks."

To this we have no answer to make, except that in using our method, as we use it, the same result will be obtained which we obtain. We repeat; there is no comparison between the effects produced by the abstraction of four or five pounds of blood, in the space of three or four days, and those produced by the abstraction of the same quantity in the space of eight, ten, fifteen, or more days. Truly, we know not why so many daily say that they bleed the same as we do, and that nevertheless they do not obtain the results which we announce. No, emphatically no; they do not bleed according to our method, whatever may be said to the contrary.*

* In an extended note, part of which has been incorporated above with the text, M. Bouillaud proceeds to show, by a detail of two cases, that distinguished practitioners, who allege that they had employed his method of free repeated bleedings in rheumatism, were in error. In the first case, the patient was bled to the extent of twelve ounces on the first day of treatment, and the same quantity on the second; sixteen ounces on the third: twelve leeches were applied to the left foot on the fifth day; and fifteen leeches to the right foot on the sixth day. On the ninth day of the disease twelve leeches were applied to each inner ankle. The other remedies were opiates, cataplasms, demulcent drinks, and a little oxymel of squills.

I would ask, says the author, whether, in conscience, the formula of repeated bleedings, four in the twenty-four hours, including local depletion, is that which was employed in the preceding case. The very fact of the failure to procure the desired relief by even free bleeding after the common plan, is, he alleges, a new and

III. From the month of September 1831 to September 1835, one hundred and eighty-four cases of rheumatism, in our clinic, have been published in the *Journal Hebdomadaire*. All of them have been cured except one, which I have given in the article on the anatomical character of acute articular rheumatism. I have already said that, at that time, I had not as yet used the method of reiterated bleedings at short intervals, such as I have given an account above; whence it follows that since using this method no patient has died.

We shall give some details of ten cases which were observed during the last six months of 1832 and 1833. At the end of this analysis we shall give a statistical table of sixteen others, observed in 1834.

In most of the patients of 1832 and 1833 the fever was most intense. They had been attacked under the same atmospherical conditions and medical constitution as the pleuropneumonias, which were received in great numbers at the same time. Some of those affected with rheumatism were seized simultaneously with pleuropneumonia or pericarditis. It was then I began to have an insight into the law of coincidence between the rheumatism of the joints and the rheumatism of the heart, between rheumatic arthritis and rheumatic pericarditis and endocarditis.

Two of these cases were very mild, and did not require large emissions of blood. Of these ten cases there were seven men and three women.

1. MEN.—(In the Hotel Dieu.)

1st Patient, 19 years old—three bleedings of four bowls each, twenty-four leeches; cured sixteenth day.

2d Patient, 59 years old—milder attack than the preceding—two bleedings of three or four bowls; cured on the tenth day.

3d Patient, 22 years old: a pretty smart attack—two bleedings of three or four bowls, ninety leeches; cured on the fifteenth day.

4th Patient, 22 years old: two bleedings of three or four bowls, sixteen leeches; cured sixteenth day.

5th Patient, 45 years old—three bleedings of three or four bowls; cured twentieth day.

6th Patient, 25 years old: very intense attack, in which almost all the joints were affected—seven bleedings of three or four bowls, fifty-eight leeches; cured twenty-fifth day.

7th Patient, 30 years old: the most intense attack, occupying all the joints, with very high fever—four bleedings of three or four bowls, forty-four leeches; cured fourteenth day. Relapse from exposure to cold: five fresh bleedings of three bowls; cured again sixteen days after the relapse.

incontestable proof of the superior efficacy of the practice which he advances and advocates.

In the second case, the patient, a female, had been bled on alternate days four times for the first eight days, and afterwards had, at successive times, fifteen leeches applied to the right shoulder, eight to the wrists, twenty-eight to the ankles. The duration of the treatment (in the Hotel Dieu) was for two months and a half, at the expiration of which time she was still not entirely well.

2 WOMEN.

8th Patient, 19 years old ; of a delicate constitution : intense rheumatism, and complicated with endocarditis—four bleedings of three or four bowls, six leeches ; cured sixteenth day. When this patient left, there was still a bellows sound quite perceptible, which masked the valvular flapping of the heart ; the external rheumatism had entirely disappeared.

9th Patient, 23 years old : mild attack—twenty leeches ; cured from the eighth to the tenth day.

10th Patient, 45 years old : chlorotic, affected with utero-vaginal catarrh—one bleeding of two or three bowls, and fifteen leeches ; cured sixteenth day.

NOTE.—The adjuvants were demulcent drinks, diaphoretics, baths, opiates either externally or internally, laxatives, compression on the joints where there was a puffy swelling without pain, absolute diet until the fever had ceased.

Statistical Table of sixteen cases of Acute Articular Rheumatism, treated after the method of repeated bleedings at short intervals, general and local, during the five months of the year 1834.

Date of the disease on entrance	Venesection at the arm.	Leeches.	Cups scarified.	Duration of treatment.	Time of cure after entrance.
MEN.					
8th day	1 (4 bowls)	52		9 days	17 days
3d	4 13 "	12		9	14
15th		30	3 (10½ bowls)	17	32*
15th	4 17 "			10	23
8th	3 11 "			6	14
3d	6 20 "	20	1 3½ "	23	26
15th	3 12 "			7	22
8th	2 9 "	94	2 6 "	14	22
15th	4 16 "			6	21
7th	2 7 "	40		8	15
6th	1 4 "			7	13
WOMEN.					
5th	2 7 "		2 6 "	12	17
7th	4 12 "	11		12	19
3d	1 3½ "	24		11	14
3d	7 24 "			16	19
5th	5 11 "	157		15	20

* We must remark, that in this patient the rheumatism was confined to the knee, and that it was the longest and most rebellious of all. It is not, however, the only one of the kind. When the disease thus fixes itself on a few joints, it has generally more intensity and a stronger hold than when spread over many. It must also be noted, that in this patient the rheumatism had commenced fifteen days previously to entrance, and that, nevertheless, it terminated less rapidly than in those who entered only a few days after the commencement of the attack. This last fact is addressed to those who have answered our statements by saying that, in those cases in which the rheumatism was cured as promptly as we announced, it was because it had existed a long time before their entry. This objection appeared very strange to us ; for, as a general rule, we cure so much the more promptly acute articular rheumatism as it is of more recent date at the moment of entrance of the patient.

NOTE.—The medium quantity of blood abstracted, generally and locally, in the above cases was about four or five pounds. The medium duration of the malady, until a complete cure, about nineteen days. In one patient alone, the abstraction of four bowls sufficed for the cure. The adjuvants were as follows: in nine patients, opiates; in two, a blister, in one of whom also a purgative; in two, baths; in three, mercurial frictions, with or without compression of the joints. We have only reported as cured those who have no fever, who rise, walk, and eat a quarter, half, or three-quarters allowance.

IV.

I shall terminate this chapter by the detail of two cases of acute articular rheumatism, rapidly cured by bleedings in quick succession; although in one, at least, of which the heart was seriously affected. I shall, however, previously give an analysis of eight analagous cases, already detailed in my *Clinical Treatise on the Diseases of the Heart*.

The subject of the twenty-seventh observation in the Treatise, had been sick eight days when he entered. Treated by bleedings in quick succession he was cured in fifteen days, and ate then his quarter allowance.

The subject of the thirty-third observation had been sick three or four days when he entered: treated like the preceding he became convalescent on the fifth day. He wished to go out about the tenth day, but as the heart was not quite well we kept him till the end of the month, he having come in on the eighth of October. From the seventh day the pulse had fallen from 96 to 56.

The subject of the thirty-fourth observation having already experienced six attacks of articular rheumatism, was seized with the seventh, five or six days ago, December 6th, when he entered; he was cured at the end of the month, after having been bled several times in quick succession. January third, a pleurisy came on, which soon yielded to fresh emissions of blood, and he went out on the eighteenth of the month. The precordial dulness which on his entrance occupied a surface of sixteen inches square, was reduced to a surface of an inch square. In the observations eighty-four and eighty-five, similar means were followed by similar results. It is curious and instructive to compare these cases with the ones in which blood-letting is employed according to the ordinary method, or which were treated by other methods than blood-letting. Comparative therapeutics are not sufficiently insisted on at the present time.

The subject of the thirtieth observation had been sick three days, when he entered the clinic of our honourable and learned colleague, Dr. Dalmas, June twenty-seventh; from the twenty-eighth to July eighteenth, he was bled five times from the arm, and had seventy-five leeches in four applications. Nevertheless, July twentieth, pericarditis still existed to a considerable degree, and the pulse was 102. The patient did not go out till August twelfth, not being yet in a healthy condition. The four first bleedings, of three bowls each,

were made June twenty-eighth, twenty-ninth, thirtieth, and July first; the fifth bleeding, of two bowls, July ninth; blisters, purgatives, Malaga wine, and sinapisms, were also employed; the wine was used to combat some typhoid symptoms. He remained six weeks.

The subject of observation thirty-one was treated by me also after the old method, pretty freely applied however. Convalescence only commenced at the end of twenty days, and when he went out the bellows sound of the heart had not entirely disappeared, though he seemed well in other respects.

The subject of observation thirty-two was a child twelve years of age, who was received into the clinic of M. Baudelocque, October eleventh; he had only been sick two days. Treated by a purgative and tartar emetic in large doses, he was not in a condition to leave before the twenty-fifth day. At this time there was yet a bellows sound in the precordial region; respiration was at times straightened and the smallest departure from a proper regimen brought back the diarrhoea. M. Dance in an excellent Memoir has shown the inefficacy of tartar emetic in large doses in acute articular rheumatism. In the subject of the first case reported in these new researches, this medicine and bleedings at long intervals were not able to arrest the disease.

In comparing these facts with the preceding ones, and with the two observations which we are about relating, to which I could add others of daily occurrence, we must necessarily conclude that the emissions of blood in quick succession cannot, with our present knowledge at least, be advantageously replaced by any other method, least of all by the expectant one. We have at the present moment a fresh example of this truth. A man is received with a mild rheumatism; we abandon the disease to nature, seconded by baths, diet, and emollients; sixteen days pass away without cure: but still more, to some slight signs of endo-pericarditis are added evident ones of a double pleuritic effusion; then we have recourse to abstractions of blood in quick succession, and the patient becomes fully convalescent in seven or eight days.

Observation I.

Acute articular rheumatism occupying the feet, knees, hands, elbows, &c.; five bleedings in five days, and twenty-four leeches; convalescence on the sixth and seventh days. No relapse; left the seventeenth day.

J. B. Berguin, aged 28 years—artilleryman with unlimited furlough; dark skin, strong constitution, came from Metz fifteen days since, when he entered our clinic, December 19, 1833. On the journey he had been subjected to rain, wind, and fatigue. It is, however, only within five or six days that he has felt pains in the lower extremities strong enough to cause him to keep in bed. Nothing had been done previous to his admission. On the 20th the pains continued in the lower extremities, and especially in the knees; the joints of the superior extremities were but slightly attacked. There was little swelling and no redness in the knees: the least motion increased the pains, on account of which the patient remained motionless in his

bed as if he were greatly prostrated. The face was red and animated ; pulse strong and voluminous, 96 to 100 ; skin moist, the sweat being viscid and exhaling a musty odour ; sleeplessness, thirst, loss of appetite, tongue white in centre, red at the sides and at the point. Two bleedings of four bowls, infusion of elder and wild poppy, poultices, enemata, diet.

21st.—Is easier as regards the pains in the lower extremities, but the upper ones are worse ; the wrists and hands are swollen, red, hot, and very painful on the least motion ; the elbows and shoulders not so much so. Another bleeding of four bowls ; twelve leeches to each hand ; other means as above.

22d.—General ease, less fever, immobility and prostration ; the wrists not so red nor painful. A fourth bleeding.

23d.—The patient is very well ; no fever, pulse 80 ; skin of a natural temperature, moist ; no pain ; if symptoms return he is to be bled in the evening. At 8 P. M., return of pain in the wrists and shoulders ; towards morning they were calmed ; he was not bled.

24th.—Pulse still strong, full, hard, 80 to 84. To terminate the disease a fresh bleeding of three and a half bowls is prescribed ; two cups of chicken water were allowed. The crassamentum of the five bleedings was covered with the buffy coat, or rather a membrane of a white grayish colour, quite shining at the upper part and very resisting ; the proportional quantity of serum increased from the first bleeding to the last.

25th.—The patient is quite well ; pulse 80 to 84, less hard and full ; convalescence. On the following days no relapse ; some twitchings in the superior extremities, but no swelling or pain, and which slightly impedes motion ; food is increased and baths ordered. The patient feeling perfectly re-established went out January 5, 1834.

Thus we have an acute articular rheumatism attacking almost all the joints, with high fever, really arrested in five days of energetic treatment. The cure was so complete, that on the seventeenth day of admission he was able to leave the hospital.

Observation II.—Reported by Dr. Raciborski.

Acute articular rheumatism in the hands, elbows, shoulders, both knees, and right foot. Five bleedings in four days ; poultices to the joints ; narcotics ; convalescence in four or five days after the commencement of the treatment ; no relapse. Left on the 13th day.

Frances Villette, a cook, aged 27 years, never had children, entered La Charité Hospital March 12th, 1834. Her parents had been exempt from rheumatism. At the age of six weeks she had the small pox, of which she exhibited the marks on her face. Has a strong constitution. Since the age of 18 years, the time of her first menstruation, her menses always came very regularly and abundantly. She has lived in Paris four months in a damp situation. Her profession exposes her to great changes of temperature, in her being often obliged to go down into the cellar after being much heated near the fire. Five days ago she felt the first slight pains in the lumbar region, which lasted two days. Next day pain in the knees came

on ; but no inconvenience in her arms ; no fever, nor chill, nor headache. The pains in the inferior extremities increased, and she was obliged to go to bed ; in the evening a physician was sent for who bled her largely, and ordered a decoction of barley and honey. Fourth day finding herself no better she was taken to the hospital.

March 14th.—Impossibility to lift the hand to the head ; pain in all the joints ; face animated ; sibilant *rale* at the anterior and posterior part of the chest. I bled to three or four bowls, and the same in the evening ; infusion of flowers of elder and violets sweetened with syrup of gum ; gummy potion with half an ounce of diacordium.

15th.—The patient only feels a little numbness in the legs, and chiefly in the right foot ; but the knees are swollen, red, and painful. All the articulations of the upper extremities are attacked, and the wrists especially, very severely ; slight cough without expectoration ; sibilant *rale* all over the chest ; the sound on percussion is good ; 104 to 108 pulsations ; 28 inspirations ; skin hot ; face red ; tongue white ; thirst ; stools and urine healthy. The blood by the first bleeding presents a general buffy coat but thin, and that of the last a partial buffy coat but thicker than the other. Bled to four bowls by a large orifice ; infusion of elder and violets sweetened with syrup of gum ; gummy potion with half an ounce of syrup of diacordium ; poultices around the painful joints ; diet.

16th.—Coagulum of blood in the form of a mushroom of remarkable density ; buffy coat very well defined ; the arms are only a little numb, and not so painful as yesterday ; the knees which were the most painful are no longer so, and the patient can move them with ease ; tongue not so white nor coated ; considerable thirst ; 88 pulsations ; sweats much ; is bled three bowls.

17th.—The serum of the blood predominates ; coagulum dense, and covered with a thick buffy coat, and elevated edges ; patient is coming on finely ; but little uneasiness in the wrist and scapulohumeral articulations, chiefly the left ; 88 pulsations ; pulse undulating and well developed.

The fifth bleeding of three bowls was practised ; soda water ; two pills, each containing a quarter grain of opium ; two cups of chicken water.

18th.—Coagulum buffy, with raised edges of well marked consistence ; but slight uneasiness in right wrist ; 67 pulsations ; convalescent. Infusion of elder and violet, sweetened with syrup of gum, two pots ; two pills each containing a quarter of a grain of opium ; two cups of chicken water.

19th.—No pain in any of the joints ; two soups ; three potages ; one cup of milk ; opiate pills as before.

20th.—Convalescence continues ; 64 pulsations ; pulse well developed ; go on with same remedies ; bath ; a roasted apple.

21st.—No pain in any part ; but little debility ; continue remedies ; quarter allowance.

22d.—Improves very satisfactorily.

25th.—Cure perfect ; and on the 26th she left the hospital.

March, 1843.

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